STRUCTURED COMMUNICATION: EFFECTS ON TEACHING EFFICACY OF STUDENT TEACHERS AND STUDENT TEACHER – COOPERATING TEACHER RELATIONSHIPS

A Dissertation

by

DON WAYNE EDGAR

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2007

Major Subject: Agricultural Education

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Approved by:

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ABSTRACT

Structured Communication: Effects on Teaching Efficacy of Student Teachers and Student Teacher – Cooperating Teacher Relationships.

(May 2007)

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Teaching efficacy beliefs of agricultural science student teachers, and their relationship with their cooperating teachers during field experiences, are variables that may affect the number of student teachers entering the profession. The purpose of this study was to examine the effects implementing structured communication between student teachers and cooperating teachers would have on student teachers' self-perceived teaching efficacy, and the relationship between the student teacher and cooperating teacher during the student teaching experience.

The learning environment of these field experiences must be more fully understood to explain why some student teachers enter the profession of agriculture science teaching, and others do not. A conceptual model guiding this study, based upon a thorough review of the literature, explains the role of constructivism, teaching efficacy, and communication theory. This study employed a quasi-experimental design with a non-random sample in a multiple time-series design.

The average respondent in this study was a 23 year old white undergraduate

female placed at a multiple placement cooperating center. Respondents in an environment where the amount and type of communication between student teachers and cooperating teachers was structured were less efficacious when compared to those respondents who were not in a structured communication setting. In addition, student teachers in a structured communication environment declined in their teaching efficacy measurements overall, whereas student teachers who were not involved in structured communication increased in their self-perceived teaching efficacy levels. Through contrast analysis, the age and academic standing of student teachers significantly affected their perception of the value cooperating teachers placed upon student teacher – cooperating teacher relationships. Structured communication influences student teachers' beliefs regarding their ability to teach and their perception of their relationship with the cooperating teacher.

In order to better understand the perceptions of student teachers regarding their teaching efficacy levels, and the student teacher – cooperating teacher relationship, additional research should be conducted in these identified areas. In addition, further research should be conducted on these variables at other institutions of higher education with teacher preparation programs in agricultural education.

DEDICATION

This dissertation is dedicated to my best friend and loving wife – Leslie. You have inspired me to raise my expectations of myself and others. I could never have achieved this without your support and advice, especially when I needed to ask any questions. I thank you for showing me the need to question even when things look linear because as you would say there may be something that was not understood upon first glance. Because as we strive to not only tell but show our children, they can do anything they set their minds to, we have shown them real life examples of people whose diligence pays off in searching for your dreams and reaching out and catching them.

To our beautiful children: Alissa, Emily, Madison, Paden, and Ryle. You can accomplish anything you set your minds to. Never give up and continue to strive to better yourselves so that others can see what they can do through your lives. Thank you for the sacrifices you have made.

I would be remiss to not mention my mother who impressed upon me to attend college for nearly three years after I graduated high school. You instilled in me the need to learn and to better myself through education. Now, eighteen years, later I am finally finishing my course work but not just an undergraduate degree. Thank you for your support through all of my life.

ACKNOWLEDGEMENTS

I would like to acknowledge with sincere appreciation my chairs and committee members for this dissertation. To my chairs: Drs. Roberts and Murphy I would like to thank you for your continual advice and availability. You were never too busy to answer a question or give advice and provide every available resource you could think of when I needed help. I will always strive to be able to provide the help and advice that you provided for me as I encounter students in my future pursuits. Drs. Briers and Denton, although you were titled as committee members, you were like chairs and were available whenever I needed help and always gave me wise advice based upon your outstanding years of service in higher education. I could never have been blessed with a better doctoral committee than I have had here and the lessons that were learned through this process will guide me throughout my future career. Thank you all for your diligence and labor and most especially your passion for education.

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CHAPTER I

INTRODUCTION

The National Council for Agricultural Education (The Council, 2002) created the initiative Reinventing Agricultural Education for The Year 2020. The first goal outlined in this report was to provide "an abundance of highly motivated, well-educated teachers in all disciplines, pre-kindergarten through adult, providing agriculture, food, fiber and natural resource education" (The Council, 2002, p. 4). Agricultural education is charged to provide the most highly motivated and efficacious teachers to improve knowledge about agriculture. How can preparatory agricultural education professional programs accomplish this task? Does preservice teacher education provide skills and abilities, beliefs, and motivation to teacher education graduates of agricultural education departments? Are there avenues that can be researched in order to improve those abilities and skills, beliefs, and motivation of preservice teacher education?

The discipline of agricultural education continually faces a deficiency of qualified teachers filling positions in public schools (Camp, Broyles, & Skelton, 2002). Camp et al. (2002) reported there were 798 secondary agricultural education positions available for new graduates of agricultural education in 2001. Of the 857 newly qualified agricultural education graduates, only 509 (59%) chose to enter the profession of agricultural education at the secondary level. The discipline of agricultural education graduates enough professionals to fill the positions available, and yet many of those graduates choose not to enter the field of agricultural education. What factors

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This dissertation follows the style and format of the *Journal of Agricultural Education*.

contribute to a graduate's choice to enter the profession of agricultural education?

A significant element of preservice teacher preparation is the field experience portion of most teacher education programs. Field experiences are usually conducted as early field experiences and student teaching. Both have been found to contribute to a decision to enter the profession of agriculture education. Myers and Dyer (2004) stated that being involved in early experiences contribute to preservice teachers' decision to enter the profession of agricultural education at the secondary level. They also stated that preservice teachers in agricultural education programs alter their beliefs as a result of field experiences. Therefore, we must conclude that student teacher field experiences can have dramatic effects upon the attitudes of those involved in these experiences. Denton (1986) concluded that early field experiences integrated with coursework and student teaching allow student teachers to be students of teaching (who are students of education) and not merely information conveyors.

Student teaching is an important element of the teacher education program (Borne & Moss, 1990; Deeds, Flowers, & Arrington, 1991; Edwards & Briers, 2001; Harlin, Edwards, & Briers, 2002; Norris, Larke, & Briers, 1990). Furthermore, both early field and the student teaching (field) experiences positively impact preservice teachers of agricultural education programs (Myers & Dyer, 2004). Because student teaching has been documented as such an important element of the career preparation for agricultural education graduates, the factors associated with teacher education programs and especially the student teaching experiences need to be explored.

Teacher education programs must place student teachers at cooperating centers

that provide the best experience available (Rome & Moss, 1990). Agricultural education must look into how the teacher education programs are structured and define avenues that will allow graduates to be motivated to enter the agricultural education profession. Camp et al. (2002) stated that teacher education programs should expand their capabilities to prepare student teachers to meet the needs of secondary agricultural education programs. Garton and Chung (1996) stated that teachers who were not proficient in teaching pedagogical skills and hold a belief in their abilities will struggle in their role of motivating students to learn.

Learning through experience has been a trademark of agricultural education since its early beginnings. "Neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation, during the learning period" (Stimson, 1919, p. 32). Student teaching is a period of active learning through experience. This activity aligns with the theory of constructivism, which operates under the premise that learners create understanding through experience (Schuman, 1996). "What someone knows is grounded in perception of the physical and social experiences which are comprehended by the mind" (Johansson, 1991, p. 5). Student teaching experiences are physical experiences whereby the student teacher is immersed in experiences as a learner and also as a teacher practitioner. Dewey (1938) stated that all learning is experiential, but not all experiences are educational. In accordance with the principles that Dewey purported, this study will investigate the effects of communication between cooperating teachers and student teachers and the change in teaching efficacy and perceptions of relationships of student

teachers. Experiential learning will be enhanced through educational experiences that allow the student teacher to reflect on practices through communication with cooperating teachers.

Lev Vygotsky (1978) stated, “every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)” (p. 57). Additionally, he proposed that all higher tasks begin in relationships involving individuals. Vygotsky’s (1978) social development theory spurred the concept of situated learning by Lave and Wenger. Lave and Wenger (1991) purported that learning generally takes place as a function of activity, context, and the culture in which learning occurs. They further described situated learning as to place thought and action in a specific place and time, which involves other learners, the environment, and the activities to create meaning. It is further postulated that to situate learning is explained by defining a particular setting in which the thought and action processes are incorporated by experts in order to achieve skill. Thus, the learner will undertake knowledge tasks. Lave and Wenger (1991) stated that the premise of situated learning is learning occurs at all times and in all activities of that individual. Because of the social nature of situated learning, learning and beliefs are influenced greatly through their activities and outcomes associated with activities.

Self-efficacy has been defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Self-efficacy can be acknowledged as perceived belief in abilities of an individual.

Success or failure of individuals can be determined through the knowledge and skills individuals possess and how they interpret the results of that attainment. Therefore, efficacy beliefs have been acknowledged as powerful predictors of the level of success that individuals can attain (Pajares, 1996). To further delineate self-efficacy at teaching, teaching efficacy has been defined as "the teacher's belief in his or her capability to organize and execute action required to successfully accomplish a specific teaching task in particular context" (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 22).

The relationship between the cooperating teacher and student teacher is paramount to the experience of the student teacher. Social influences deeply affect how individuals develop and function. It is also paramount to understand that learning occurs as a direct function of the activity, context, and culture in which the learner is involved.

Fritz and Miller (2003) concluded that student teachers should "reflect on their daily concerns and receive feedback … communicate with other student teachers and supervisors" (p. 51). Structured communication between the cooperating teacher and student teacher is a vital link that needs to be addressed to understand beliefs held by student teachers. This study investigated the implementation of a communication form (see Appendix K) designed to encourage structured communication about student teacher's weekly performance. The communication tool is a device that conveyed meaning in order to create a shared understanding between the cooperating teacher and the student teacher about performance. The communication tool acted as a channel between the cooperating teacher and the student teacher to provide feedback given to the student teacher. The communication tool was implemented weekly by the cooperating

teacher which encouraged the cooperating teacher to meet weekly with the student teacher and communicate performance evaluations with recommendations and feedback given to encourage growth in skills and knowledge about classroom teaching. Through an understanding of how communication affects the relationship and its further effects upon teaching efficacy of the student teacher, the study furthers the knowledge base towards understanding this dynamic interaction and resulting efficacy levels held by teacher education graduates. Dewey (1980) stated:

> Not only is social life identical with communication, but all communication … is educative. To be a recipient of a communication is to have an enlarged and change experience. One shares in what another has thought and felt … has his own attitude modified. Nor is the one who communicates left unaffected. (p. 8-9)

Statement of the Problem

The student teaching experience is the capstone experience in teacher education programs in agricultural education. Pfister (1983) held the belief that the student teacher field experience was the most important part of educating teachers. Understanding the needs of student teachers during the student teaching phase of their professional training program is paramount to producing highly qualified and motivated professionals who will enter the profession.

Why agricultural education program graduates more teachers than necessary to fill available openings yet just over half of graduates choose to enter the profession is a phenomenon that needs to be examined. To the growing body of knowledge of reasons why graduates may choose not to enter the profession, this investigator examined

teaching efficacy beliefs of student teachers and the effects of implementing structured communication.

Purpose

The purpose of this study was to examine the effects of implementing structured communication on teaching efficacy and on the relationship between the student teacher and cooperating teacher during the student teaching experience. A secondary purpose was to explore relationships between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, and placement at cooperating center.

Hypotheses

Based on consulted literature, the following null and alternative hypotheses were developed to guide this study.

Null Hypotheses

Ho_1: There is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ho_2: There is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool.

Ho_3: There is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ho_4: There is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity,

agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ho_5: There is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Alternative Hypotheses

Ha_1: There is a difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ha_2: There is a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool.

Ha_3: There is a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ha_4: There will be a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ha_5: There will be a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating

center.

Significance of the Study

Darling-Hammond and Bransford (2005) stated, "teacher education programs can benefit from exploring the degree to which their courses and programs are consistent with what is known about how people learn" (p. 76). It can be said that individuals learn best when they feel they can accomplish learning in their present situation. Teachers' sense of efficacy has been related to teachers' enthusiasm, effort, behavior, innovativeness, persistence, willingness to work with difficult students and commitment to teaching (Tschannen-Moran et al., 1998). Recently research on self-efficacy of teachers has shown that student attitudes and achievement are important variables of study. Student outcomes of achievement, motivation, and sense of efficacy are also related to teaching efficacy (Ashton & Webb, 1986; Guskey & Passaro, 1994; Tschannen-Moran et al., 1998). Pajares (2000) stated:

> Teacher efficacy has become an important construct in teacher education, and teacher educators should continue to explore how teacher efficacy develops, what factors contribute to strong and positive teaching efficacy in varied domains, and how teacher education programs can help preservice teachers develop high teacher efficacy. (p. 21)

Understanding the effects of relationships in the student teaching field experience can determine their effects on teaching efficacy of student teachers. This study could determine for agricultural education teacher educators the benefits of structured communication on efficacy levels held by student teachers. Student teaching experiences

could then be modeled so development of teacher efficacy is supported. The importance of communication between the cooperating teacher and the student teacher could be further understood and strategies could be formed to address this powerful variable.

Limitations of the Study

The results, conclusions, and implications of this study have several limitations. These limitations are as follows:

1. A quasi-experimental design research methodology was imposed.
2. The sample used in the study was purposively selected and not randomized. Therefore, generalizing the conclusions, results, and implications of this study beyond the sample is inappropriate.
3. External validity threats of interaction of testing and selection and experimental variable may have an effect. This effect should be controlled with the use of non-reactive arrangements.

Assumptions

Several assumptions were made prior to and during this study. Assumptions were as follows:

1. The student teachers' self-efficacy level can be assessed through the Teacher's Sense of Efficacy Scale used in this study.
2. Participants in this study accurately completed the Teacher's Sense of Efficacy Scale.
3. Participants in this study accurately completed the background and demographics portion of the instrument.

4. Communication was structured through the use of the communication tool provided for evaluation of student teachers in this study.
5. The sample drawn was representative of all student teachers in agricultural education at Texas A&M University.

Definition of Terms

There are several important terms used throughout this study. In order to better understand their meaning, the following definitions were used in this study.

Agricultural education – the study of the methods and principles of teaching as they relate to knowledge acquisition of concepts and principles of agriculture (Barrick, 1989; Williams, 1991).

Agriculture teacher – individual who plans, delivers, evaluates instruction, and aids the learning process about agriculture (Newcomb, McCracken, & Warmbrod, 1993).

Communication tool – a guide employing a four page form used to assign and convey meaning to create a shared understanding between the student teacher and cooperating teacher described more fully in chapter three.

Cooperating teacher – an agricultural education teacher in a public school who supervises a student teacher during the field experience.

Field experience – phase of the teacher education program in which the student teacher is located in a department of agricultural education at a cooperating school in the public school sector. One type of field experience is student teaching.

Multiple placement – cooperating center where there was more than one student teacher placed during the student experience.

Preservice teacher – student enrolled in an agricultural education certificate program that has not received teaching certification and is placed in a cooperating center for field experiences.

Self-efficacy – a "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3).

Student teacher – preservice teacher placed in a cooperating center to engage in field experience prior to qualifying for teacher certification.

Structured Communication – structured, guided, and collected communication between cooperating teacher and student teacher regarding weekly performance when communication occurred.

Student teaching – phase of the teacher education program in which the prospective teacher educator is engaged in teaching agricultural education at a cooperating school in the public school sector. One type of student teaching is a field experience.

Teaching – the process of guiding and directing the learning process whereby learners acquire new skill, attitudes, or knowledge (Newcomb, et al., 1993).

Teaching efficacy - "the teacher's belief in his or her capability to organize and execute action required to successfully accomplish a specific teaching task in particular context" (Tschannen-Moran et al., 1998, p. 22).

University supervisor – a teacher educator from the student teacher's affiliated university who conducts observations and supervises the student teacher during field experiences.

Chapter Summary

There is a great need for qualified and highly motivated individuals in the

agricultural education programs of the secondary schools in our nation (to fill available positions). Teacher education programs provide technical knowledge and field based experiences in their teacher preparation programs. The student teaching experience is an important element in teacher education programs for agricultural education.

In order for field based experiences to be meaningful and knowledge to be gained, a positive and valid experience must be completed. In order to enhance this experience, a positive social climate should be provided that will enable the student teacher to interact with these experiences physically and socially. Lave and Wenger (1991) purported that learning normally occurs as a function of activity, context, and culture in which it occurs. Learning is an on-going process that involves all three elements.

A student teacher's belief in their abilities can raise their teaching efficacy level and increase their performance. Because of the social nature of the student and cooperating teacher relationship, teaching efficacy can be affected through communication level with the cooperating teacher. Hypotheses were formulated to understand these variables in this study. The purpose of this study was to determine the effects of the implementation of a communication tool upon student and cooperating teacher relationships and self-efficacy during the student teaching experience. The chapter concluded with a statement of the problem, the purpose of the study, and objectives of the study. The chapter further stated the significance of the study, limitations, assumptions, and definition of terms.

CHAPTER II

REVIEW OF LITERATURE

Purpose

The purpose of this study was to examine the effects of structured communication on teaching efficacy, and the relationship between the student teacher and cooperating teacher, during the student teaching experience. A secondary purpose was to explore relationships between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, and placement at cooperating center.

Hypotheses

Based upon consulted literature, the following null and alternative hypotheses were developed to guide this study.

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center.

Theoretical Framework

Constructivism

The theoretical framework of the study is grounded in the theory of constructivism. Constructivism operates under the premise that learners create understanding through experience (Fosnot, 1996; Schuman, 1996). As we look into the underpinnings of this study, we must first look at the evolution of learning to place into context the use of this theory.

The process of learning has been an important consideration for early philosophers and educators that continues today. Looking back at the roots of learning and how it occurs, we see two major schools of thought about the nature of knowledge (epistemology). The two main positions can be divided into rationalism and empiricism (Schunk, 2004).

Rationalism has been defined as the nature of knowledge, as arising from reason (Schunk, 2004). Plato believed people have ideas and they learn about ideas through reasoning. On the other hand, empiricism postulates that experience as the source of knowledge (Schunk, 2004). Aristotle believed knowledge was gained through the environment. He believed knowledge was associative, meaning that one idea will trigger the recall of the other.

As we look at history of learning, we see the two main positions of early thought regarding the nature of knowledge (empiricism and rationalism) streaming into today's theories of learning. Empirical thought is typically expressed in behavioral theories and

rational thought can be seen at the base of cognitive theories.

Theories of learning based upon behaviorists' views dominated the psychology of learning during the first half of the 1900s. During this time period students were expected to understand and learn only rudimentary skills such as reading, writing, and arithmetic. The Classical Conditioning theory of John Watson addressed this view. It developed the appreciation of literature, art, science, etc, through the association of students' early experiences with positive reactions. This theory along with Edward Thorndike's Connectivism advanced the positive relationship between stimulus and response (S-R). Stimuli and reinforcement may explain some human learning, but research indicates that to explain learning we must take into account people's thoughts, beliefs, and feelings (Bigge & Shermis, 1999; Gredler, 2005; Schunk, 2004).

To this point in history, behaviorism theories were unable to explain certain social behaviors impacting learning. Therefore, Jean Piaget theorized levels of complex reasoning, which led to the development of cognitive learning theories. Piaget (Schunk, 2004) postulated that cognitive development starts at infancy and continues throughout adulthood. Knowledge is the outcome of interaction between the student and the environment. Implications of Piaget's theory for education were to understand cognitive development, keep students active, create incongruity, and provide social interaction. Each learning process adds to the complex knowledge structures of the individual.

In the latter part of the 20th century, another emergent view of cognitivism was presented with an understanding of the effects of social, cultural, and personal factors on towards learning. Lev Vygotsky and Albert Bandura individually developed learning

theories that dealt with those issues. Vygotsky (1978) developed the cultural-historical theory, which took into account the nature of culture and its effect on learning and the role of social interaction and its impact upon the learner. Bandura addressed cognitive deficiencies he foresaw with his social-cognitive theory. Bandura touted that observers could learn behavior through social settings such as observations (Bandura, 1977).

Beyond these major views and/or theories of learning, a third perspective of learning theory has risen from the cognitive realm of educational theory which is the premise of the theoretical framework outlining this study. Constructivism adds to the basis of cognitivism and works of predominantly cognitivist theorists. Constructivism is based on the principle that we construct our perspectives of the world through individual experiences (Schuman, 1996). "What someone knows is grounded in perception of the physical and social experiences which are comprehended by the mind" (Johansson, 1991, p. 8).

Constructivism upholds a more unrestricted learning experience based upon individuals' experience. This type of learning is not as easily evaluated nor is the results the same for every learner because constructivism perceives every learner as different based upon his/her experiences. Perkins stated:

> …information processing models have spawned the computer model of the mind as an information processor. Constructivism has added that this information processor must be seen as not just shuffling data, but wielding it flexibly during learning – making hypotheses, testing tentative interpretations, and so on. (Perkins, 1991, p. 21 in Mergel, 1998)

Constructivists promote that the design of learning environments that support the construction of knowledge by the learners.

Doolittle and Camp (1999) proposed four epistemological tenets of constructivism based upon literature (Dewey, 1980; Garrison, 1997; Gergen, 1995; Larochelle, Bednarz, & Garrison, 1998; Maturana & Varella, 1992; Von Glaserfield, 1984); the four tenets are as follows:

> 1) knowledge is gained through dynamic cognizing by the individual, 2) individual behavior becomes more viable in particular environments because of the adaptive nature of cognition, 3) cognition is not a method to create accurate representations of reality but organizes and clarifies an individual's sense of experiences, and 4) learning is mutually rooted in cultural, social, and language-based interactions and neurological/biological construction. (p. 6)

Therefore, Doolittle and Camp (1999) concluded that constructivism recognizes the student's constant position in "the personal creation of knowledge, the importance of experience (both individual and social) in this knowledge creation process, and the realization that the knowledge created will vary in its degree of validity as an accurate representation of reality" (p. 7). These basic principles provide the foundation of the learning, knowing, and teaching process which can be differentially emphasized resulting in a menagerie of degrees of constructivism.

The field of constructivism has been divided over time into three areas: cognitive constructivism, radical constructivism, and social constructivism. Cognitive constructivism operates under the first two of the Doolittle and Camp (1999) tenets

namely: the acquisition of knowledge is an adaptive process resulting from dynamic cognizing by the individual. Radical constructivism operates within the first three tenets of the aforementioned tenets of constructivism. Doolittle and Camp (1999) described radical constructivism as "knowledge acquisition is an adaptive process that results from active cognizing by the individual learner, rendering an experientially based mind, not a mind that reflects some external reality" (p. 8). Social constructivism embraces all four tenets, defining the nature of knowledge as a social process that is a shared experience rather than an individual process.

Social constructivism will act as the foundational principle for this study. The two basic tenets of social constructivism provide that knowledge is social in nature and knowledge is the result of social interaction rather than an individual experience. Therefore, we must conclude that through social interaction learners are able to gain knowledge through the dynamic interplay of social interactions that clarify knowledge based on experiences rooted in cultural, social, and language-based interactions and neurological/biological construction. This study will evaluate those experiences, to understand the role played between communication of the teacher and learner, and the effects upon the teaching efficacy level of the learner.

Social-Cognitive Theory

Constructivist thought guide the theoretical framework for this study but a more thorough understanding of teaching efficacy needs to be addressed. Therefore, efficacy and how it is derived should be explored. The underpinning foundation for self-efficacy theory is found in Albert Bandura's social cognitive theory (Bandura, 1977). Pajares

(2001) stated that in order to study the development of individuals in isolated contexts we should also understand their external environment. Bandura's (1986) social cognitive theory takes into account that individual's develop and function within numerous social influences instead of an isolated environment. Bandura (1986) declared that a reciprocal relationship exists between behavior, external environment, and personal factors that interact to form a triadic reciprocal system (see Figure 2-1).

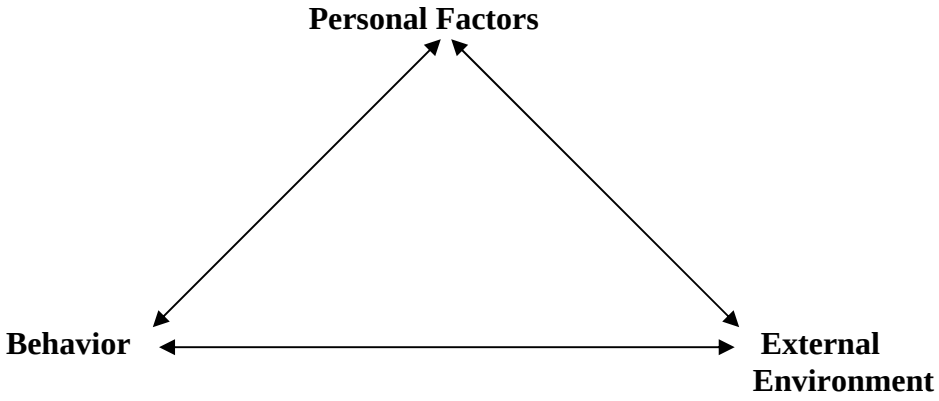

Figure 2-1 Model of triadic reciprocality (Bandura, 1997).

Bandura (1977) described this relationship in his social learning theory as follows:

> The relative influences exerted by these interdependent factors differ in various settings and for different behaviors. There are times when environmental factors exercise powerful constraints on behavior, and other times when personal factors are the overriding regulators of the course of environmental events. (p. 10)

Through this reciprocal triadic interaction of personal, behavior, and external factors

individuals are “neither driven by inner forces nor buffeted by environmental stimuli” (Bandura, 1977). A person’s psychological functioning is clarified through understanding the constant reciprocal interaction of environmental and personal influences.

The social cognitive theory as explained by Pajares (2000) provided:

> a view of human behavior in which the beliefs that people have about themselves are key elements in the exercise of control and personal agency and in which individuals are viewed both as products and as producers of their own environments and of their social systems. (p. 2)

Understanding the reciprocal and triadic nature of the social cognitive learning theory is paramount to understanding and predicting individual behavior. Pajares (2000) stated that how individuals view their performance will alter their environment which alters future beliefs and performance. The process of reciprocal determinism as refined by Bandura (1986) suggests that personal factors, environmental influences, and behavior produce interactions that result in triadic reciprocality. Thus, Bandura explained the factors determined through human behavior, and the beliefs individuals possess, are key elements to be viewed as products and also as producers of their own social systems and environments. The social cognitive theory is centered on how an individual cognitively processes and construes their environment.

Self-Efficacy Theory

From Albert Bandura’s social cognitive theory emerged the theory of self-efficacy. Bandura (1997) stated “perceived self-efficacy occupies a pivotal role in social

cognitive theory because it acts upon the other class of determinants" (p. 35). Because self-efficacy is grounded in social cognitive theory, one of the primary tenets is reciprocal determinism. Bandura's triadic reciprocality (1986, 1997) as portrayed through the social cognitive theory refers to the idea that personal factors (cognitive, affective, and biological), behavior, and external environment work collectively as determinants which impact each other bi-directionally in relation to self-efficacy. Therefore, self-efficacy can be viewed as both a personal and a social construct given that individuals function individually and collectively (Knobloch, 2002).

Self-efficacy has been defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Bandura (1997) stated:

> Efficacy is a generative capability in which cognitive, social, emotional, and behavioral subskills must be organized and effectively orchestrated to serve innumerable purposes. There is a marked difference between possessing subskills and being able to integrate them into appropriate courses of action and to execute them well under difficult circumstances. (p. 17)

Success or failure of individuals can be determined through the knowledge and skills individuals possessed and how they interpret the results of that attainment. Therefore, self-efficacy theory concludes how well knowledge and skills are acquired and learned. Efficacy beliefs are defined and measured independently from performance. Consequently, efficacy beliefs present a source in calculating the occurrence and persistence of learning.

Self-efficacy should not be confused or aligned with self-esteem. Bandura (1997) addressed this concern by stating, “perceived self-efficacy is concerned with judgments of personal capability, whereas self-esteem is concerned with judgments of self-worth” (p. 11). He further stated that self-efficacy is unlike self-esteem because it is task specific. This is a major tenet of self-efficacy in that efficacy is specific toward an individual’s beliefs about individual and separate abilities, performance, and skill sets. An example can be seen in an individual who performs poorly in a skill such as welding but has a high skill level in other areas. Although their self-perceived efficacy of welding ability aligns with their performance (poor), they still possess high overall self-esteem.

It should be noted that individuals’ self-perceived abilities have little or no correlation with their perceived value of themselves. Efficacy is determined by their perception of capabilities in situations and not is their self-worth or self-esteem. Although individuals tend to be involved in activities that support their abilities and thus self-esteem is correlated at a high value, their abilities and perception of self-esteem do not interact for high or low performance on given tasks. Individuals who possess high self-efficacy beliefs often view complicated tasks as challenges. Thus, they remain committed to the task and increase their efforts when experiencing failure. In contrast, when individuals have low self-efficacy, they will resist undertaking tasks not just because of their complexity but because they perceive the tasks as a personal threat. Difficult tasks cause low self-efficacy individuals to focus on their own personal weaknesses and possible negative outcomes, causing them to give up easily. Therefore, efficacy beliefs have been acknowledged as powerful determinants and predictors of the

level of success that individuals can attain (Pajares, 1996).

Mastery experiences, vicarious experiences, social influences, and physiological and emotional arousal all influence self-efficacy (Bandura, 1986, 1997). Therefore, positive feedback, positive reinforcement, and seeing others succeed have the ability to increase an individual's self-efficacy. Self-efficacy is domain specific. Domain specific refers to the idea that individuals can be efficacious in one topic or situation and not efficacious in another (Pajares, 1996). Therefore, understanding that a student teacher could have high efficacy in teaching in the area of animal science, but not in another area of the teaching curriculum is important.

Teaching Efficacy

As knowledge about learning grew from the behavioral view and moved toward a more cognitive approach to learning, human functioning was viewed by many through the concept of expectancy. Many theorists postulated "that expectations influence actions focused almost exclusively on outcome expectations" (Bandura, 1997, p. 28). Many theorists believed that learning consisted of acquisition of habits. J.B. Rotter's (1966) social learning theory postulated "behavior is influenced by generalized expectancies that outcomes are determined either by one's actions or by external forces beyond one's control" (Bandura, 1997, p. 28). Therefore, individuals who hold beliefs that reinforcement of their actions is in their control can be classified as containing an internal locus of control. Conversely, individuals who hold beliefs that reinforcement of their actions are outside of their control can be classified as having an external locus of control.

Teaching efficacy has been classified as a type of self-efficacy by Bandura (1977) through his social learning theory. He further outlined teaching efficacy as efficacy expectations and outcome expectations. Outcome expectation is an individual's "estimate that a given behavior will lead to certain outcomes" (Bandura, 1977, p. 79). Efficacy expectation has been described as an individual's "conviction that one can successfully execute the behavior required to produce outcomes" (Bandura, 1977, p. 79). Efficacy expectations and outcome expectations are futuristic views of individual's expectations. Conversely, locus of control either external or internal is a historic perception from the individual of what has happened when attributing causation.

Teaching efficacy initially was defined as "the extent to which the teacher believes he or she has the capacity to affect student performance" (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137). Guskey and Passaro (1994) asserted that teaching efficacy is a "teachers' belief or conviction that they can influence how well students learn, even those who may be considered difficult or unmotivated" (p. 4). It has also been described as "the teacher's belief in his or her capability to organize and execute action required to successfully accomplish a specific teaching task in particular context" (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998, p. 22).

As discussed earlier, Bandura (1986, 1997) stated four sources of self-efficacy: mastery experiences; vicarious experiences; social influences; and physiological and emotional arousal. All four sources contribute in different ways to self-perception of teaching competence and the analysis of the teaching task (Tschannen-Moran et al., 1998). Cognitive processing differentiates the impact these sources have on teaching

efficacy. Cognitive processing involves what is attended to, the instructor's beliefs about each of their experiences, and what is remembered.

The most powerful source of efficacy can be gained through mastery experiences. This source of efficacy postulates that through successful performance efficacy raises which contributes to positive expectations about future performances. It must be noted that not all successful performances enhance efficacy. If individuals perceive that their performance is not successful, efficacy beliefs will be lowered even if they performed successfully as viewed by others. Conversely, when individuals perceive they perform tasks successfully their efficacy is high even if others perceive their performance as unsuccessful. Tschannen-Moran et al. (1998) stated "self-perception of teaching competence is affected by all four sources identified by Bandura, but it is mostly directly influenced by mastery experiences and the physiological arousal associated with those experiences" (p. 19). Through teaching, individuals can assess their capabilities and experience the consequences associated with the teaching process. Individuals gain knowledge about their strengths and weaknesses in instructing, evaluating, and managing students in a classroom setting.

Self-perception is another source of teaching competence affected through the level of physiological and emotional arousal (Tschannen-Moran et al., 1998). Individuals who are relaxed and feel positive indicate future success through their self-perception. Physiological arousal indicators such as increased respiration and heart rate, perspiring, trembling, "butterflies" can signify either positivity such as excitement or negativity such as anxiety or stress. Moderate physiological arousal levels can focus attention and

provide energy, which can positively affect performance. High physiological arousal levels can detract from performance.

Vicarious experience can be gained by individuals through watching others teach directly. Vicarious experiences allow a student viewing others teaching, as a student themselves, or through media presented, to experience teaching which provides impressions about teaching and its context (Tschannen-Moran et al., 1998). In addition, student teachers gain vicarious experiences from teacher education programs and classes, professional literature, teacher's lounge conversations, etc… All of these cause the teacher to pose this question; can I make a difference with the learners? Through viable and proficient observations of successful teaching, beginning teachers may be enabled to believe that they possess the ability to be successful in similar circumstances (Bandura, 1977, 1986; Schunk, 2004; Tschannen-Moran et al., 1998). Conversely, viewing unsuccessful performances through vicarious experiences when strong efforts were made can lessen efficacy beliefs.

Social persuasion can be done specifically or generally. This source of efficacy can offer strategies for overcoming obstacles, give encouragement, and provide specific feedback about an individual's performance (Tschannen-Moran et al., 1998). Student teachers have been involved in course work and/or professional workshops about the nature and task of teaching. Although background gained through professional training can add to the abilities and competence of student teachers, this toolbox of abilities have not proven successful to individuals who possess them. Efficacy will not develop until individuals see them in action either through mastery or vicarious experiences. Bandura

(1986) stated social persuasion depends largely upon credibility, expertise, and trustworthiness of the persuader. Tschannen-Moran et al. (1998) stated:

> Specific performance feedback from supervisors, other teachers, even students, can be a potent source of information about how a teacher's skills and strategies match the demands of a particular teaching task. Specific performance feedback provides social comparison information, that is, whether the teaching performance outcomes are adequate, inferior, or superior to others in a similar teaching situation. (p. 20)

Self-perceptions can be lowered if feedback is overly harsh rather than constructive and focused on specific performance criteria. Social persuasion is a direct experience through the cooperating teacher and student teacher relationship in regards to the communication evoked through performance appraisals.

These four sources of self-efficacy are used in the creation of pivotal roles about beliefs, but an individual's interpretations of these are vital. Individual cognitive processing will determine their influence towards the examination of "the teaching task, its context, and the assessment of personal teaching competence (Tschannen-Moran et al., 1998). Tschannen-Moran et al. (1998) designed an integrated model of teachers' sense of efficacy (see Figure 2-2). Tschannen-Moran et al. (1998) contend that teacher efficacy is cyclic. Because of the cyclic nature of this model and efficacy, higher efficacy is believed to lead to greater persistence when meeting with obstacles. Successfully overcoming obstacles causes efficacy to heighten. Conversely, lower efficacy lessens the persistence of the individual, leading to poor performance and lower

teacher efficacy. Through this model the new source of efficacy information is the communication tool intervention of this study.

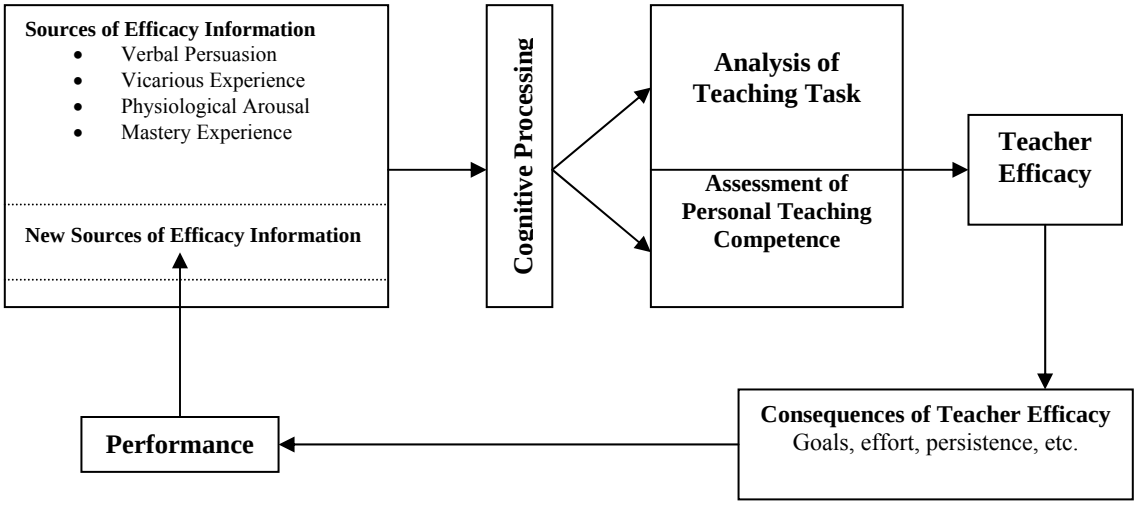

Figure 2-2. Tschannen-Moran, Woolfolk Hoy, and Hoy's (1998) model of teacher efficacy.

Teaching Efficacy Measurement

The measurement of teaching efficacy was born through a Rand Corporation questionnaire nearly thirty years ago. An extensive questionnaire had been developed and two questions were added. The results from the questionnaire were overwhelming, and the conceptualization of teaching efficacy and its measurement were born (Tschannen-Moran et al., 1998).

The measurement of teaching efficacy has evolved over time. Initially, Gibson and Dembo's (1984) Teacher Efficacy Scale was created. This instrument, created from

the initial RAND study items, was based on Bandura's (1977) social cognitive theory (Tschannen-Moran et al., 1998). This early measurement (30 item measure) of teacher efficacy, produced by Gibson and Dembo (1984), was a two-factor measurement. The instrument included the theoretical components of efficacy expectation and outcome expectation, based in Bandura's (1977) social cognitive theory. Efficacy expectation was labeled in this two-factor measurement as Personal Teaching Efficacy (PTE). Outcome expectation was labeled as General Teaching Efficacy (GTE). The existence of the two factors (PTE and GTE) was confirmed through a factor analysis of the 30-item instrument. "Using the Gibson and Dembo items, other researchers have confirmed the existence of two factors" (Anderson, Greene, & Loewen, 1988; Burley, Hall, Villeme, & Brockmeier, 1991; Hoy & Woolfolk, 1993; Moore & Esselman, 1992; Saklofske, Michaluk & Randhawa, 1998; Soodak & Podell, 1993) (as cited by Tschannen-Moran, et al., 1998, p. 8).

It is important to look at the roots of teaching efficacy measurement in order to see where it started and to understand how it has evolved in its use in this study. The Rand Corporation published a study in 1976 that studied the accomplishments of a variety of reading programs and interventions (Armor, Conroy-Oseguera, Cox, McDonnell, Pascal, & Zellman, 1976). Two efficacy items had been included in the instrument based upon Rotter's (1966) article entitled "Generalized expectancies for internal versus external control of reinforcement." These two items were summed together in order to gain a determination of teaching efficacy.

Rand Corporation item 1 stated "When it comes right down to it, a teacher really

can't do much because most of a student's motivation and performance depends on his or her home environment." This item is correlated towards GTE because if an individual "expresses strong agreement with this statement indicates that environmental factors overwhelm any power that teachers can exert in schools" (Tschannen-Moran et al., 1998). This GTE item is governed by the "I can't" perception since there were external factors prevalent that individual's felt they were not able to control and thus ensure motivation and performance of the learner(s). Rand Corporation item 2 stated, "If I really try hard, I can get through to even the most difficult or unmotivated students." This item is correlated towards PTE because if the teacher makes strong agreement then he/she believes their abilities have influence upon learning by the student. This PTE item is viewed as "I can" perception of teacher efficacy because individuals feel they have personal influence, a sense of power, and impact learning situations themselves as educators. In summary, GTE is individual's perception that teachers can make a difference in certain but not in all situations and PTE is an individual's self-efficacy belief that individually they can make a difference towards learners (Edwards, Green, & Lyons, 1996).

In measuring teaching efficacy, Gibson and Dembo's (1984) measure of teacher efficacy has been the most popular. Another measure, developed by Hoy and Woolfolk (1990), and called the Teacher Efficacy Scale – Short Form (TES-SF), incorporated factor analysis to test the validity of the teacher efficacy construct. The TES-SF incorporated 10 items from Gibson and Dembo's Teacher Efficacy Scale. Five of those items were used to measure PTE and five were used to measure GTE.

Tschannen-Moran (2000) purported that for usefulness and generalizability in teaching efficacy scales, instruments should measure teachers' perception of their competence across a wide array of tasks and activities. Tschannen-Moran and Woolfolk Hoy (2001) developed the Teacher's Sense of Efficacy Scale (often referred to as the Ohio State Teacher Efficacy Scale (OSTES). The instrument consisted of 24 items. The items divided into three constructs, each made up of eight items. The three constructs consist of subscales named engagement, instructional strategies, and classroom management. Subscale and total scores using the OSTES can be used to assess teacher efficacy (Tschannen-Moran, 2000). Content validity of the OSTES was established through an expert panel and consulting existing literature (Tschannen-Moran & Woolfolk Hoy, 2001). Construct validity was established through factor analysis and comparison to existing instrumentation. Face validity was established through a series of pilot tests. Tschannen-Moran and Woolfolk Hoy (2001) recommended using the total score to measure teacher efficacy for student teachers instead of subscale scores because subscale scores reveal slight meaning. Tschannen-Moran and Woolfolk Hoy determined this understanding because student teachers have not assumed real teaching responsibilities.

Preservice Teaching Efficacy Research

Bandura (1977) stated that efficacy could be most affected early in the learning process. Therefore, most teaching efficacy research to date has centered on preservice teachers. Given teacher efficacy's powerful role in the learning process, examining efficacy development and those attributes that affect it can be very productive for the

needs of today's classrooms.

The student teaching experience provides individuals the ability to assess their personal capabilities for teaching. Student teachers often do not realize the complexity of the task of teaching; the many tasks associated with teaching (Tschannen-Moran et al., 1998). Expectations about teaching change because of the roles in which they are placed during student teaching experience. Student teachers find that the expectations they have for students and the expectations that students have for the learning environment do not mesh, therefore a gap is built between the teacher and the learner. Student teachers often lower standards they have set in order to gain success for students in the classroom thus lessening their teaching efficacy level and self-perceived competency level as a teacher. Putnam and Borko (2000) stated that teacher educators have struggled with the notion of how much knowledge and what kind of environment creates meaningful experiences.

Teacher preparation programs are continually evolving as teacher educators deduce how best to prepare future educators for today's complex classroom environment. Typically, student teachers conduct performance experiences in on-campus teacher education programs before going into the field in controlled and structured classrooms (Putnam & Borko, 2000). Thus, these early experiences affect teacher efficacy levels before the preservice teacher enters the field during their student teaching phase of their respective program.

Experiences seen as productive to enhance teacher efficacy for preservice teachers are to provide more opportunities for performance experiences of instructing students in varied settings and complexities (Tschannen-Moran et al., 1998). Tschannen-

Moran et al. (1998) further state that:

> Performance feedback (verbal persuasion) early in learning that highlights the positive achievements of the apprentice teacher and that encourages emphasis on attributions that are controllable and variable (e.g., effort and persistence) will have a positive effect on the development of efficacy beliefs. (p. 24)

This study looks specifically at this characteristic as an intervention that may effect teacher efficacy beliefs of student teachers. It is postulated that performance feedback will affect efficacy levels of student teachers allowing them to gain competencies through experience and evaluation of performance.

Teaching Efficacy Research in Agricultural Education

Teaching efficacy of teachers in agricultural education has recently been a research trend. Research has mainly centered upon preservice and novice teachers. Because of teacher shortages and retention in the field of agricultural education, efficacy of student teachers is an area of research that should be further investigated.

In a study of self-efficacy of preservice and beginning agricultural education teachers, Rodriguez (1997) found that Personal Teacher efficacy (PTE) was higher in preservice and novice teachers than General Teacher efficacy (GTE). In describing PTE, the respondents believed they possessed the skills to impact student learning. Conversely, in describing GTE the respondents felt the negative constraints of the learner's home environment caused a barrier that they could not overcome. These results were supported with Hoy and Woolfolk (1990) finding that the respondents felt their abilities increased during the preservice experience but were less confident of their

abilities to overcome outcome expectancies.

In another study, Knobloch (2002) studied the effects caused by the first ten weeks of the school year on teacher efficacy of student teachers and novice teachers in agricultural education. Knobloch found that at the end of ten weeks of teaching first-year teachers had the lowest efficacy and preservice teachers held the highest level of teacher efficacy. He surmised that different teaching experiences influenced their development and efficacy level. Knobloch also concluded there was little to no change in teacher efficacy during the first ten weeks of the school year for preservice teacher and second and third year teachers. He concluded that, for first year teachers, teaching efficacy did decrease.

In a study examining the relationship between agricultural education student teachers' learning style, teacher heart, and teacher sense of efficacy, Swan (2005) found that efficacy lessened as they entered their field experiences. Efficacy levels were measured at three points in this study. Although small, from point one to point two, there was a noticeable difference from points two to three and one to three in level of teaching efficacy. He concluded that these student teachers' level of teaching efficacy was quite different than that found by Knobloch (2002). The level of change in teacher efficacy was markedly lower than the results from the Knobloch study.

Roberts, Harlin, and Ricketts (2006) conducted a longitudinal examination of teaching efficacy of agricultural education student teachers. These investigators looked into the sub-constructs (student engagement, instructional strategies, and classroom management) and overall teaching efficacy. Respondents in this study were measured at

four points in their field experience semester. Respondents attended classes for the first 4 weeks of the semester before beginning their field experiences. Preservice teachers in the study had “Quite a Bit” of teaching efficacy at the first of the semester and increased in teaching efficacy by the end of the four-week period. By the middle of the 11-week field experience efficacy levels had dropped, but the levels rebounded at the end of the 11-week experience. This trend, of increasing from first measurement to the last, is consistent with Knobloch (2002).

Teaching efficacy research in an agricultural education setting is still in its early stage of development. Through further research the needs of student teachers can be identified. By identifying needs of student teachers involved in field experiences teacher education programs can be adapted and improved.

Student Teaching Relationship

Student teaching is the capstone experience of many teacher preparation programs. This capstone event impacts the experience held by student teachers through numerous experiences that occurs during the field experience. One of the major factors during this experience for student teaching is the cooperating teacher. Many institutions have stringent guidelines for choosing cooperating teachers and placing student teachers at cooperating centers. Ultimately, there are many variables that are encountered in the student teaching experiences that teacher educators do not foresee.

Kasperbauer and Roberts (2007a) found that the student teachers’ perceptions of the student teacher and cooperating teacher relationship were not predictive of a decision to teach. This study further concluded that the student teacher and cooperating teacher

relationship is important to student teachers involved in field experiences (Kasperbauer et al., 2007a). This finding is important in that it implies that student teachers involved in that study value their perceptions of relationships with cooperating teacher and should be further investigated in order to provide a valuable field experience for student teachers.

Another study conducted by Kasperbauer and Roberts (2007b) evaluated changes in student teacher perceptions of the cooperating teacher and student teacher relationship during student teaching field experiences. This study concluded that student teachers' perceptions of cooperating teachers' relationship level exhibited decreased throughout the student teaching experience (Kasperbauer, et al., 2007b). This study, although not to be generalized beyond the population studied implies that as student teachers engage in field experiences their perception of the level of relationship exhibited by cooperating teacher decreases. Further investigation into the dynamic role of the relationship between student teacher and cooperating teachers needs to be undertaken.

Communication Theory

The relationship between the cooperating teacher and student teacher has been heavily researched in the agricultural education field. Martin and Yoder (1985) stated student teacher's success during a field experience relied "on the general supervisory climate in the department and on the educational leadership abilities of the cooperating teacher" (p. 21). Therefore it is imperative that an open climate be established in order to facilitate communication between the cooperating teacher and the student teacher. Dewey (1981) stated "meanings do not come into being without language, and language implies two selves (e.g., teacher and student) involved in a conjoint or shared

understanding" (p.226). DeMoulin (1993) stated a cooperating teacher must "foster unique teaching concepts and … give support and encouragement to student teachers" (p. 160). Communication should foster efficacy growth of student teachers.

In 1960, David Berlo, developed the Source-Message-Channel-Receiver (SMCR) model. Berlo's model is prevalent in agricultural communication research partly due to its elegance and partly due to its simplicity. The SMCR model consists of four main areas: source, message, channel, and receiver. However, the model also considers feedback in order to make the model more complete.

In this model, source is where a communication originates (Guth & Marsh, 2006). Message is the content of the communication. Channel is the medium used to transmit the message to the intended receiver. Receiver is the person or persons for whom the message is intended. Feedback is the receiver's reaction (as interpreted by the source) to the message. Noise is also referred to as static and encompasses anything (physical or intangible) that may inhibit any part of the SMCR process from occurring. Figure 2-3 depicts the model and its cyclic nature.

The use of this model can readily be translated through the communication that occurs through the student teacher and cooperating teacher relationship. The source is identified through the cooperating teacher. As the cooperating teacher is considered the supervisor of the student teacher during the field experience, the cooperating teacher will serve as the source of many communication roles such as subject matter expert, daily performance evaluator, and supervisor of the student teacher.

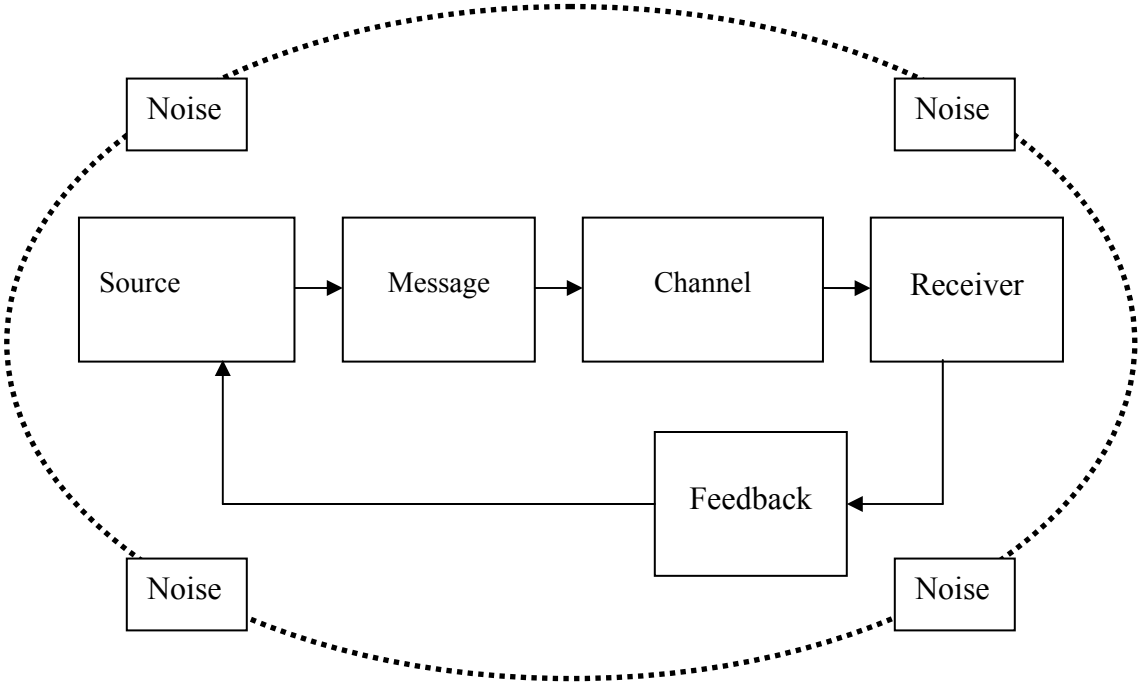

Figure 2-3. SMCR communication model.

The message will be the daily and weekly communication between the cooperating teacher and the student teacher. This message will outline many attributes relating to teaching, preparation of lessons, student counseling and advising in the agricultural education profession.

Although the message is a continuous process, communication will be evaluated in this study through the implementation of a communication form that serves as a weekly feedback tool for the cooperating teacher to use with the student teacher assigned to them during the field experience. The communication tool (weekly) feedback serves as the channel through which the message transmitted to the intended receiver is evaluated on its effects regarding self-efficacy.

The receiver is identified as the student teacher since they are the intended receiver of the communication tool feedback. Through the weekly communication process, the evaluation of performance by the cooperating teacher of the student teacher should be translated to the student teacher for reflection and feedback.

The student teacher's reaction towards feedback (as interpreted by the source) is how they evaluate the feedback given and incorporate that knowledge into improved performance or to not incorporate the feedback. The integral part of this model is that although it is cyclic, if any portion of the dyadic communication process is broken communication is halted between the source and receiver. The receiver must trust the source in order to employ the feedback given and thus raise levels of understanding for the teaching and learning process. It is imperative that each step or sequence in the model be followed because a break in the sequence will cause the vital role communication plays in this study to become less effective.

Noise is can be attributed to anything, physical or intangible, that inhibits any part of the SMCR process. It is important to note that there are a plethora of attributes that can contribute to noise in a communication setting that can happen before or during the SMCR process. One must be cognizant of the role noise plays in this model, and the outcomes it affects.

Communication is essential to the relationships that develop during the student teaching field experience. The student teacher must have an inherent trust in the cooperating teacher in order that the message received will be held as valid assessment of their performance. External factors must be understood when evaluating the effects of

communication between individuals such as cooperating teachers and student teachers.

Dunkin and Biddle's Model

The study of efficacy of preservice teachers can be traced through Bandura's social cognitive theory and efficacy theory. Efficacy research also has firm roots in the theory of constructivism. To further undergird this study, its theoretical underpinnings will be based upon Dunkin and Biddle's (1974) adaptation of Mitzel's model of the learning process (Mitzel, 1960). This model postulates that presage and context variables influence process variables which yield product variables (see Figure 2-4).

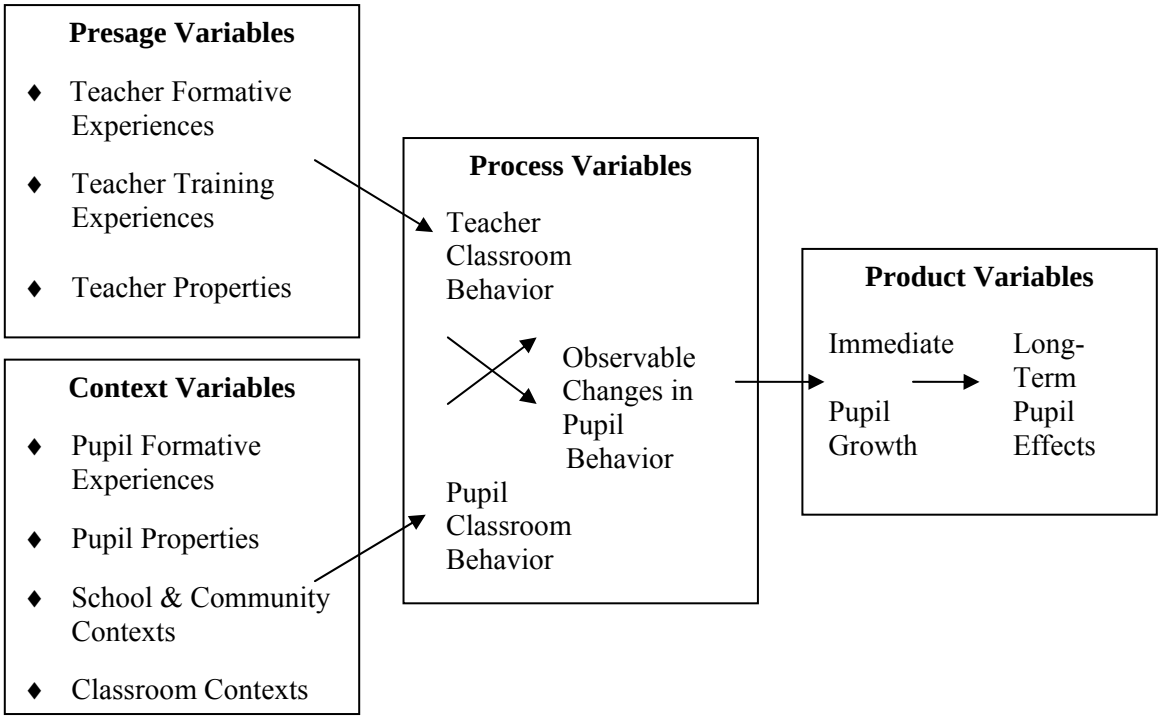

Figure 2-4. Mitzel's model for the study of classroom teaching (Dunkin & Biddle, 1974).

In this model, variables that deal with teacher characteristics are classified as presage variables (Dunkin & Biddle, 1974). Presage variables identified through this model include teacher formative experiences, teacher training experiences, and teacher properties (Dunkin & Biddle, 1974). Teacher formative experiences include social class, age, sex, and every experience the teacher has prior to preservice teacher education. Teacher training experiences include university attended, training program features, practice teaching experiences, student teaching, in-service education, and post-graduate education. The final presage variable is teacher properties. Teacher properties are those characteristics that every teacher brings into every teaching situation such as teaching skills, intelligence, motivations, and personality traits.

Variables that a teacher has little or no control over are identified as context variables. Context variables have been described as student formative experiences, student characteristics, school and community contexts, and classroom contexts (Dunkin & Biddle, 1974). Student formative experiences include experiences students have prior to entering the educational experiences in addition to social class, age, and sex. Another set of context variables is student characteristics, and include abilities, knowledge and attitudes. School and community context variables include climate, ethnic composition of community, bussing, school size, and other characteristics that affect the educational process. Finally, classroom context variables include class size, textbooks, educational television, and other physical characteristics within the context of the classroom setting.

Process variables are associated with activities that occur in the classroom (Dunkin & Biddle, 1974). Two variables inclusive of the classroom setting are teacher

behavior and student behavior. These process variables of behavior between the teacher and student have an interaction effect, which yields observable changes in student behavior.

Observable changes in student behavior (process variables) affect product variables. Product variables are the result of process variables, and are the results of teaching (Dunkin & Biddle, 1974). Product variables can be measured in immediate student growth. Measures of this product variable are subject-matter learning, attitudes towards subject matter, growth of other skills and long term student effects. These measures include adult personality, professional or occupational skills, citizenship, and contributing to the betterment of others.

Dunkin and Biddle's (1974) model was used to explain the relationship between the cooperating teacher and student teacher and the resulting efficacy effects described as product variables in this study. In this model, there are two sets of variables effecting changes in behavior: presage and context. Presage variables (teacher characteristics) are influencing the teacher. Context variables (student characteristics/student teacher) are influencing the student (student teaching when observing cooperating teacher). When presage and context variables interact in the classroom, process variables develop through interaction and alter teacher and student behaviors. Conceptually in this model, cooperating teachers assume the role of the "teacher," and student teachers assume the role of the "student," during student teacher observation time. When the student teacher assumes the role of the "teacher," their role of "student" is replaced until they communicate with their cooperating teacher and reflect upon their performance. They

will then assume the role of the student during this experience. For this study (see Figure 2.4), an adaptation of Mitzel's Model for the Study of Classroom Teaching (Dunkin & Biddle, 1974) was developed.

The examples under the product variables were changed to reflect the context of the pupil as a student teacher. The cooperating teacher serves as the major supervisor for the student teacher during student teaching field experiences, so they assume the role of "teacher." For student teaching, the "classroom" is the cooperating school. In this environment the interaction between the student (student teacher) and teacher (cooperating teacher) results in product variables.

As previously established, student teaching is an important aspect to teacher development (Borne & Moss, 1990; Deeds, Flowers, & Arrington, 1991; Edwards & Briers, 2001; Harlin, Edwards, & Briers, 2002; Norris, Larke, & Briers, 1990). In addition, cooperating teachers are important to student teaching (Norris, Larke, & Briers, 1990). The Dunkin and Biddle model takes into account a number of variables both student teachers and cooperating teachers could possess that influence the learning environment.

Student Demographics/Background

Some research addressing predictors of teaching efficacy has been conducted. Gender has been identified as a predictor of teaching efficacy. Female teachers tend to have more teaching efficacy than do male teachers (Edwards, Green, & Lyons, 1996; Ross, Cousins, & Gadalla, 1996). This may help explain the disparity between males and females in choosing to teach, with fewer males choosing to enter the teaching profession

(Ross et al., 1996).

Another predictor of teaching efficacy is experience. Teaching efficacy has been shown to be higher in preservice teachers than in experienced teachers (Benz, Bradley, Alderman, & Flowers, 1992; Tschannen-Moran et al., 1998). In a study related to agricultural education, Cano and Miller (1992) stated in Ohio that male and female agricultural education teachers had no significant difference in overall job satisfaction scores. Although not directly related to teaching efficacy, job satisfaction is correlated with the belief in one's ability to perform required tasks, which may contribute to teaching efficacy.

Chapter Summary

This chapter sought to provide a review of the literature related to the problem of this study. The theoretical background was formed in constructivism theory. Three areas of the constructivist continuum are cognitive constructivism, radical constructivism, and social constructivism. Social constructivism contends that through social interaction learners are able to gain knowledge through the dynamic interplay of social interactions that clarify knowledge based on experiences rooted in cultural, social, and language-based interactions and neurological/biological construction. Theories that align with the purpose of this study and constructivism were reviewed from the literature and outlined in this section. The theories that have guided this study are social-cognitive theory, self-efficacy theory, teaching efficacy, SMCR communication model, and social constructivism.

Bandura's (1986) social cognitive theory takes into account that individuals

develop and function within numerous social influences instead of an isolated environment. Self-efficacy has been defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Teaching efficacy has been defined as "the teacher's belief in his or her capability to organize and execute action required to successfully accomplish a specific teaching task in particular context" (Tschannen-Moran et al., 1998, p. 22). The SMCR model consists of four main areas: source, message, channel, and receiver. However, the model also incorporates feedback to make the model more complete.

To further undergird the theoretical framework of this research Dunkin and Biddle's (1974) adaptation of Mitzel's model of the learning process (Mitzel, 1960) was examined and a conceptual model was developed to guide this study (see Figure 2-5). This model postulates that presage and context variable influence process variables which yield product variables (see Figure 2-4). Also a conceptual model of Berlo's (1960) SMCR model was designed to guide the understanding of the communication process (see Figure 2-6).

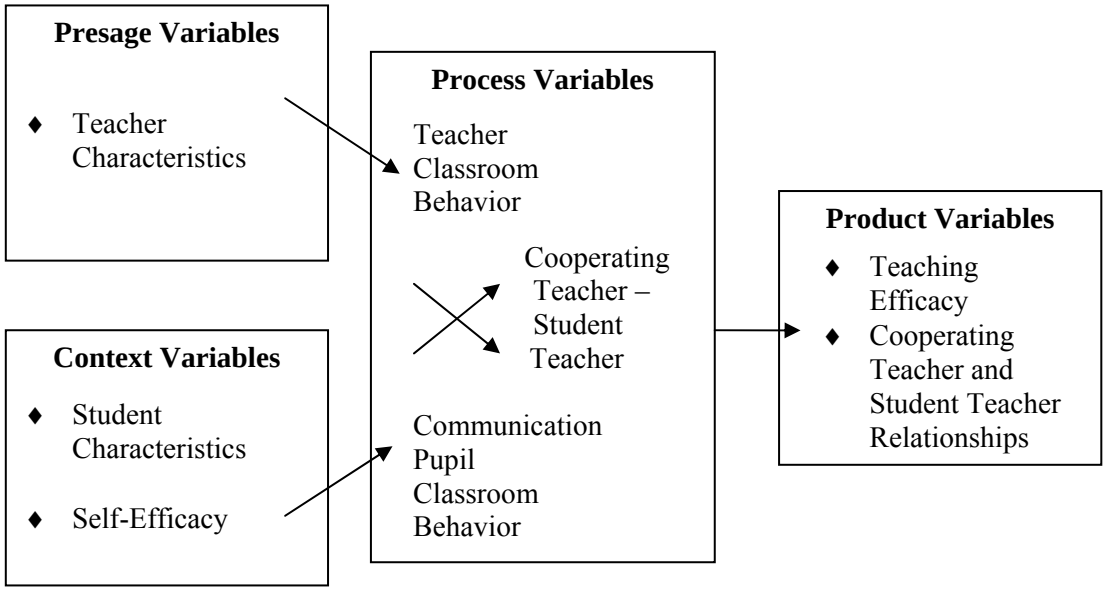

Figure 2-5. Conceptual model for examining the effects of communication through cooperating teacher and student teacher relationships and efficacy.

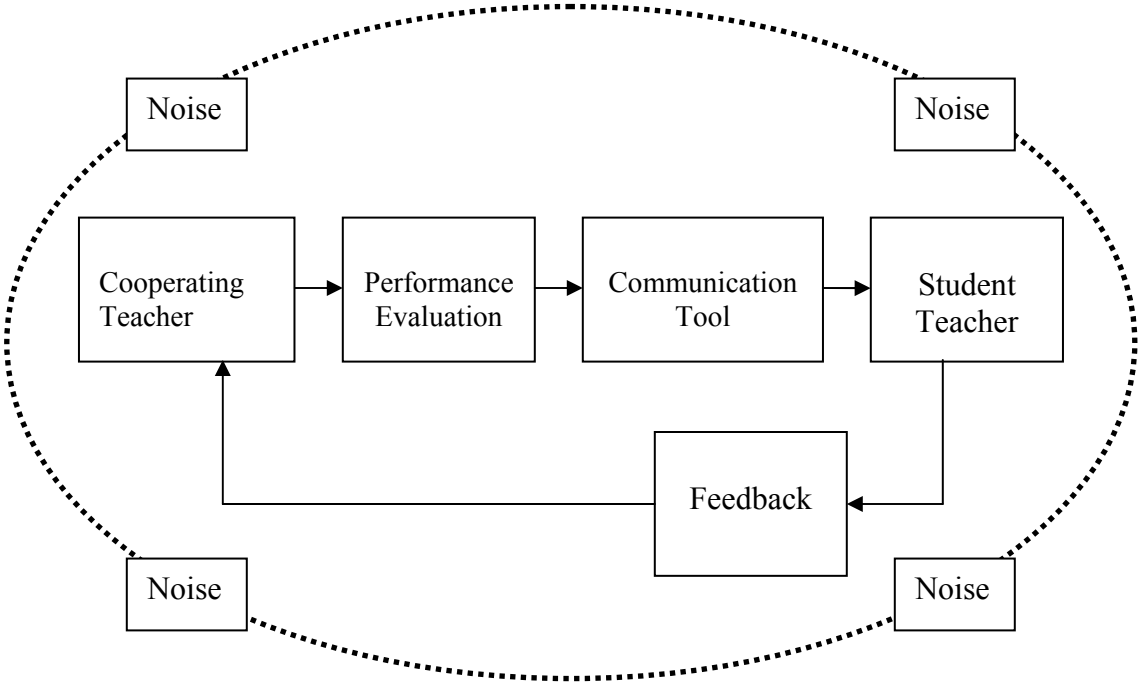

Figure 2-6. Conceptual SMCR communication model in the agricultural education field experience.

Through a methodical review of the literature, a conceptual model was developed that postulates variables associated with teaching efficacy of student teachers during student teaching field experiences can be evaluated. This model incorporates Tschannen-Moran's et al. (1998) model of efficacy combined with Berlo's (1960) SMCR model of communication to effectuate a model that encompasses the effects of communication and the social context of efficacy postulated by Bandura (1997). A major component of the model is the teaching context as outlined by Dunkin and Biddle (1974) that involved the variables of presage and context. These variables are influenced by the efficacy level held by the individual and the experiences held by the teacher and student. Teaching

efficacy is an individually held belief, and is an outcome of the interaction (process variable) between presage and context variables. This outcome will then be affected through communication between the cooperating teacher and the student teacher. This communication is affected through many variables such as personality type, channel, source and message during communication. Through communication, teaching efficacy beliefs are reflected upon by the student teacher, which leads to beliefs of performance level. Because of the cyclic nature of efficacy, the process continues with further influence of presage or context variables because the student teacher is involved in each role by means of being both a student and a teacher during field experiences.

Based upon the literature reviewed, the variables of interest in this study were identified and incorporated into the conceptual SMCR communication model for the agricultural education field experience. Independent variable used for the treatment group (communication between the student teacher and cooperating teacher) was structured through a communication form designed to promote focused communication between the cooperating teacher and student teacher. Dependent variables were identified as the teaching efficacy of the student teacher, and the relationship between the student teacher and cooperating teacher as perceived by the student teacher (called relationship). Contextual variables identified were gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, and placement at cooperating center (either alone or multiple placement) (see Figure 2-7).

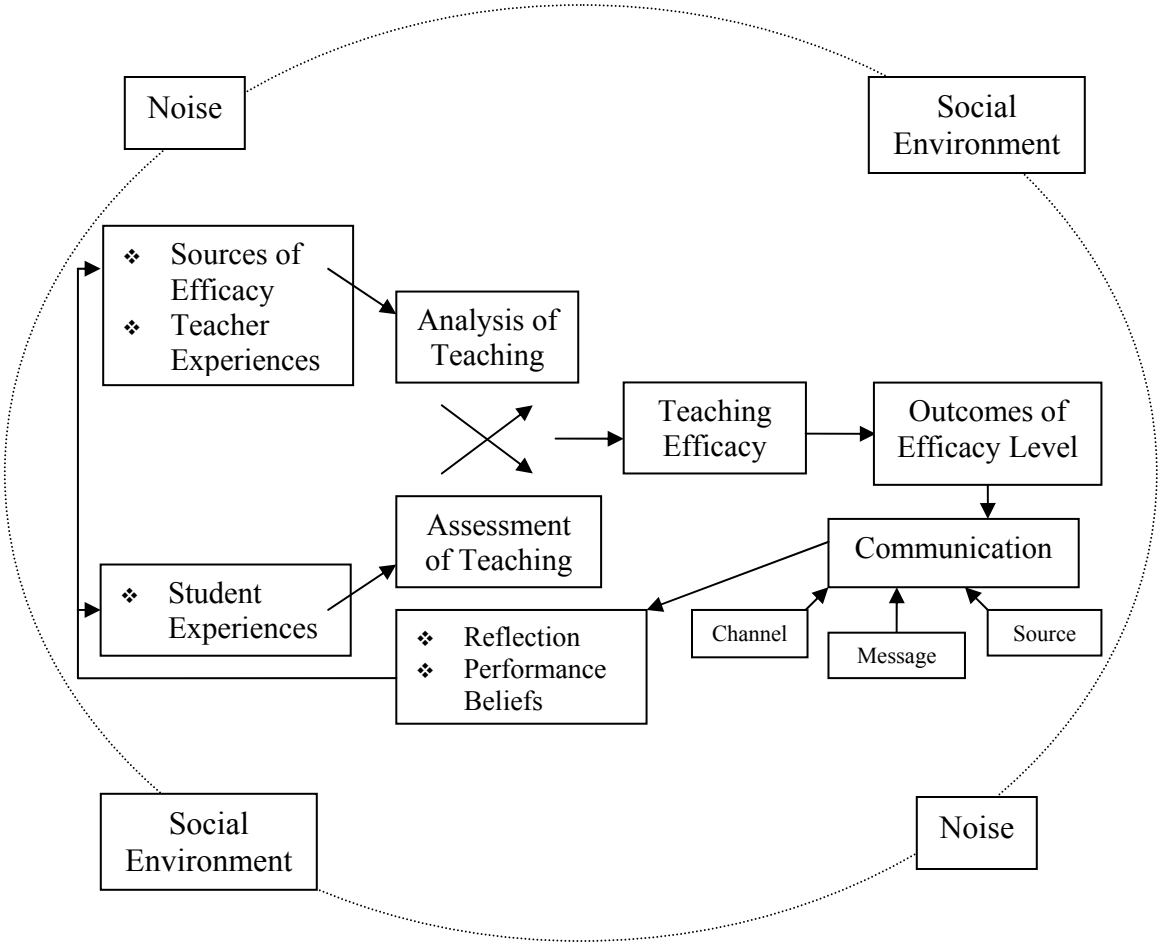

Figure 2-7. Conceptual model of the teaching efficacy affected through communication.

CHAPTER III

METHODS AND PROCEDURES

Chapter I outlined the basis for conducting this study. A historical perspective of learning was presented. In addition, current research in the area of teacher preparation was offered. The purpose of this research study and research hypotheses were provided. Assumptions were outlined, limitations were stated, and key terms were defined pertaining to this study.

Chapter II provided a theoretical and conceptual framework for studying this topic. A thorough background on self-efficacy, teaching efficacy, teaching efficacy measurement, relationships, and communication theory were presented. Based upon a thorough review of the literature, a conceptual model guiding this study was offered.

This chapter describes the research methodology employed in this study. The research methodology, the research design, procedures, population and sample, instrumentation, data collection, and data analyses are presented.

The purpose of this study was to examine the effects of structured communication on teaching efficacy and on the relationship between the student teacher and cooperating teacher during the student teaching experience. A secondary purpose was to explore relationships between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, and placement at cooperating center.

Hypotheses

Based upon the literature, the following null and alternative hypotheses were

developed to guide this study.

Null Hypotheses

Ho_1: There is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ho_2: There is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool.

Ho_3: There is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ho_4: There is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ho_5: There is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Alternative Hypotheses

Ha_1: There is a difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ha_2: There is a difference in teaching efficacy of student teacher when cooperating

teachers use a communication tool.

Ha_3: There is a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ha_4: There will be a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ha_5: There will be a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Research Design

This study employed a quasi-experimental design with a non-random sample in a multiple time-series design (#14) (Campbell & Stanley, 1963). Campbell and Stanley (1963) defined quasi-experimental designs as follows:

> There are many natural social settings in which research person can introduce something like experimental design into his scheduling of data collection procedures (e.g., the when and to whom of measurement), even though he lacks the full control over the scheduling of experimental stimuli (the when and to whom of exposure and the ability to randomize exposures) which makes a true experiment possible. (p. 34)

The design of this study was employed as follows:

Fall 2006 student teachers (n= 20)	O_1 X_1 O_2 X_1 O_3
Fall 2005 student teachers (n= 27)	O_1 O_2 O_3
Fall 2004 student teachers (n= 35)	O_1 O_2 O_3

The first measurement of teaching efficacy (O_1) was taken at the end of the first four weeks of the semester in which the participant was involved in a field experience (student teaching). The second measurement of teaching efficacy (O_2) was taken during the fifth week of the 11-week field experience at the mid-semester conference between student teachers and teacher education faculty (university supervisors) of Texas A&M University. The third (O_3) and final teaching efficacy measurement was taken at the end of the 11-week field experience. The intervention, or experimental variable (X_1), was introduced during the full field experience of the fall 2006 teacher education student teaching semester, incorporated weekly. Due to the nature of educational settings, randomization does not easily occur (Homer Tolson, personal communication, March 2, 2006). Therefore, a purposive sample of participants was used. The purposive sample was needed to represent student teachers in agricultural education through a teacher education program. This was the most accessible population to undertake this study.

Threats to internal validity were addressed in the design of this study (multiple time-series design #14) (Campbell & Stanley, 1963). Tuckman (1999) stated "internal validity depends, in part, on the condition that the effect attributed to a treatment is a function of the treatment itself, rather than a function of some other unmeasured and uncontrolled differences between treated and untreated persons" (p. 9-10). Campbell and Stanley (1963) identified eight threats to internal validity of a research study. Internal

validity threats are identified as history, maturation, testing, instrumentation, statistical regression, selection, mortality, and selection-maturation interaction between the identified threats. Internal validity threats were addressed as follows:

1. History is defined as the events that occur between measurements in a study (Campbell & Stanley, 1963). In this study, teaching efficacy is measured at three points for three samples of student teachers. Through the implementation of a time-series design, the research design cannot control for history in its entirety. The use of similar groups (ex. Fall to Fall student teachers and similar cooperating centers) has been employed to control for history in an educational setting. However, because the student teaching occurred during different fall semesters for the experimental treatment group and the control groups, history is a threat to the internal validity of the study.
2. Maturation is the change in subjects attributed to the passage of time and experience (Campbell & Stanley, 1963). Data were collected in the shortest time period accessible during which the sample was involved in field experiences.
3. Testing is the effect of taking a pretest, which may alter the posttest (Campbell & Stanley, 1963). Through a time-series design, testing is addressed and rendered implausible because of multiple observations. Testing does not occur in this study because the independent variable is used to measure that the treatment has been implemented.
4. Instrumentation is changed between testing or a single measuring instrument is unreliable (Campbell & Stanley, 1963). Instrumentation was addressed by using

parallel forms for the three points of measurement.

5. Statistical regression refers to the point that extremely high or extremely low scorers tend to regress to the mean on retesting (Campbell & Stanley, 1963). Regression is regarded as an implausible threat due to the nature of time-series designs in which measurement is taken after an elapsed time (Campbell & Stanley, 1963). Post hoc tests will be run to identify outliers in the data set and to determine the inclusion of those data points in data analysis.
6. Selection of participants is a threat to the extent that participants in the experimental and control groups have different characteristics affecting the dependent variable (Campbell & Stanley, 1963). Because of the nature of educational settings, groups were not randomly assigned. Therefore, group equivalency could not be determined beforehand.
7. Participants leaving the study prior to completion may alter the composition of the treatment and control groups have differential effect on the dependent variable. This is called mortality (Campbell & Stanley, 1963). Mortality was not a threat because being enrolled in student teaching necessitates participation.
8. Selection-maturation interaction addresses the point that participants selected into treatment groups have different maturation rates. Selection interactions also occur with history and instrumentation (Campbell & Stanley, 1963). This is acknowledged as a potential limitation because the groups were not simultaneously measured in this research design. The use of similar groups (ex. fall to fall semesters of student teachers and similar cooperating centers) has been

employed to exhibit some control for this threat.

External validity threats identified by Campbell and Stanley (1963) were interaction and testing of experimental variable, interaction of selection and experimental variable, and reactive arrangements. Experimental effects such as those stated previously are considered external validity threats when the experimental variable is not specific to those populations subject to repeated tests. In this study the experimental variable was applied to the student teacher and cooperating teacher through their use of the communication form. Therefore, in order for external validity to pose a threat, we would have to classify the effects of the treatment (independent variable) as an unusual occurrence not usually present.

The independent variable is communication between the student teacher and the cooperating teacher. Although this treatment applies structure and measurement, communication between these two entities is a normal occurrence, in this environment. Therefore, external validity is not threatened in this study because although the process of communication between the cooperating teacher and student teacher is more structured and measured, it is considered a normal process in the field experiences of a preservice teacher, and a natural part of the environment (Campbell & Stanley, 1963). So, while the method of communication is altered, student teachers would not even be aware of the difference.

Reactive effects are those effects attributed to individuals knowingly being a part of an experiment (Campbell & Stanley, 1963; Tuckman, 1999). Reactive effects or "Hawthorne" effects are considered an external threat if a participant does not answer as

they would normally do if they did not believe their answers were part of a study or experiment. Student teachers in this study are exposed to many measurements during their student teaching experience. It is proposed that reactive effects pose no threat to the validity of this study because of their involvement in multiple measurements throughout this experience.

Procedures

Research dealing with teaching efficacy has focused on student teachers because "once efficacy beliefs are established, they appear to be somewhat resistant to change" (Tschannen-Moran et al., 1998). Data were collected during the semesters of fall 2004 (n= 35), fall 2005 (n= 27), and fall 2006 (n= 20). These semesters represent the culminating field experience enrollment (AGSC 436) of teacher education candidates in agricultural science at Texas A&M University. Teaching efficacy data were collected at three points during the semester in which student teachers were enrolled during this time period. Background and demographic data were collected when self-efficacy measurements were taken from to the treatment and control groups of the study.

Sample

The sample for this study was student teachers enrolled in field experience (AGSC 436) at Texas A&M University. This purposive sample was chosen to represent student teachers engaged in field experiences. This sample included three semesters of students during the student teaching phase of their teacher education program. The control groups consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semesters of 2004 (n= 35) and 2005 (n= 27). The

treatment group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semester of 2006 (n= 20). Therefore, the researcher makes the assumption that the results from this study can be inferred and inferential statistics are employed (Oliver & Hinkle, 1982). Judgments based on the findings from this study should be made with caution when generalizing to other groups of student teachers in agricultural education (Oliver & Hinkle, 1982).

Independent/Treatment Variable

Communication Form

The communication form (see Appendix L) employed in this study is an adaptation used by the Department of Education at Florida State University. The communication form contains 12 sections of accomplished practices of the student teacher. The cooperating teacher must assign either an O - Outstanding; A - Accomplished; P - Progressing; NI - Needs Improvement; or NA - Not Applicable or observed. The following are guides for the basis of rating the student teacher in the twelve areas used on the communication tool. **O –** Outstanding: The student teacher demonstrates the skills consistently in an exemplary manner. **A –** Accomplished: The student teacher demonstrates the skills consistently in an acceptable manner. **P –** Progressing: The student teacher is showing adequate progression toward the demonstration of this practice. There has been shown continual improvement. **NI** – Needs Improvement: The student teacher demonstrates the skills ineffectively or a serious absence of these skills is observed. The student teacher needs guidance and improvement in this area. **NA** – Not Applicable or observed for this

observation/evaluation. There is not enough data to make a judgment or no opportunity to observe these skills.

The cooperating teacher rated the student teacher based on their observation of prescribed practices each week. For each prescribed practice, comments and recommendations fields were available to further describe their observations of the student teacher. The comments and recommendations were presented to the student teacher and cooperating teachers as useful for reflection and skill improvements throughout the student teaching field experience. Directions on using the communication tool and the submission process were outlined in both a short and long form (see Appendix E & F).

Instrumentation

Numerous instruments were employed to assess the variables of interest in this study. When possible, existing instruments were employed with established validity and reliability. Each instrument is discussed below and reliability coefficients and validity correlations are presented.

Dependent Variables

Teaching Efficacy

Tschannen-Moran and Woolfolk Hoy (2001) developed the Teacher's Sense of Efficacy Scale (often referred to as the Ohio State Teacher Efficacy Scale (OSTES)). The instrument consists of 24 items that contains three constructs, each of which contains eight items (see Appendix K). The three constructs are quantified through scales named engagement, instruction, and classroom management. The reliability

coefficient (Cronbach's Alpha) for each is as follows: Engagement = .87, Instruction = .91, and Classroom Management = .90. Subscale and total scores using the OSTES can be used to assess teacher efficacy (Tschannen-Moran, 2000). Content validity of the OSTES was established through an expert panel and consulting existing literature (Tschannen-Moran & Woolfolk Hoy, 2001). Construct validity was established through factor analysis and comparison to existing instrumentation. Face validity was established through a series of pilot tests.

Relationship Questionnaire

A researcher-developed instrument (Roberts, 2006; Kasperbauer & Roberts, 2007b) was utilized to collect perceptions of student teachers concerning the student teacher's relationship with the cooperating teacher (see Appendix K). This instrument was developed to coincide with the background/demographic and teaching efficacy instrument. Cooperating teacher/student teacher relationship section consisted of 43 items rated on the student teacher's perception of this relationship. There were four constructs used in this instrument. The constructs were as follows: teaching/instruction, professionalism, personality, and cooperating teacher/student teacher relationship. The teaching/instruction construct consisted of nine statements. The professionalism construct contained 10 statements. The personality construct contained 10 statements. Finally, the cooperating teacher/student teacher relationship consisted of 14 statements for that construct.

The scale ascertains the level that the cooperating teacher exhibits those characteristics as perceived by the student teacher. Face and content validity were

established through an expert panel in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University. Cronbach's Alpha reliability coefficient for the relationship questionnaire was .78.

Contextual Variables

Background/Demographics

A researcher-developed instrument (Roberts, et al., 2006; Kasperbauer & Roberts, 2007b) was utilized to collect background and demographic data for this study (see Appendix K). This instrument was developed to coincide with the teaching efficacy instrument. Background/demographics section consisted of seven items: gender, age (years), ethnicity, placement at cooperating center, semesters of high school agricultural education courses completed, academic standing, and agriculture work experience. Face and content validity was established through an expert panel in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University. Dillman (2000) stated that questions having ready-made answers such as demographic questions gain more accurate responses.

Data Collection

Data were collected from the participants on three variables of study. Data were collected on teaching efficacy, communication, and relationship. A description of the data collection process follows.

Teaching efficacy data were collected at three points during each semester of the research design. The first data collection point for teaching efficacy was taken at the end of the first four weeks of the semester in which the participant would be enrolled in

AGSC 436 field experiences (student teaching); this is at the conclusion of an on-campus, preparatory ("block") program before actual student teaching. The second data collection point for teaching efficacy was taken during the fifth week of the 11-week field experience at the mid-semester conference between student teachers and teacher education faculty of Texas A&M University. The third data collection point for teaching efficacy was taken at the end of the 11-week field experience when the student teachers returned to the university for the final class day and wrap-up session of student teaching.

Communication form data were collected during the fall 2006 semester only. These data were used to validate the implementation of the treatment in the study (fall 2006, n=20). The data were collected each of the 11 weeks of the field experience through a communication form available via the Internet or through print. Cooperating teachers had the option to fill the form out and send to the researcher electronically or they could print and complete the form and send to the researcher via United States postal service mail. The tailored design method (Dillman, 2000) was employed to collect data pertaining to implementation of the communication form. The tailor design purports that "respondent trusts that the expected rewards of responding will outweigh the anticipated costs" (p. 27). Tactics outlined by Dillman (2000) were employed in order to gain trust and response rate from participants. Reminder emails were sent out to non-respondents each Tuesday after the week the communication form was due. Follow up contacts were made via phone the following Friday.

Implementation of Treatment

DeMoulin (1993) stated that a cooperating teacher should "foster unique teaching

concepts and … give support and encouragement to student teachers" (p. 160). Structured communication through cooperating teachers and student teacher is an important aspect of the student teaching field experience in order to promote growth in skill acquisition and teaching competencies. The communication form treatment is a tool used to encourage communication between the student teacher and cooperating teacher through dialog of performance categories outlined in the form. Through this intervention, cooperating teachers are encouraged to evaluate student teachers and provide recommendations and comments to improve the skills and competencies of the student teachers. This intervention structured and encouraged weekly performance feedback to the student teacher which allowing continuous growth during the field experience of student teaching. Dewey (1981) stated "when communication occurs, all natural events are subject to reconsideration and revision; they are re-adapted to meet the requirement of conversation, whether it be public discourse or the preliminary discourse termed thinking" (p. 132).

The communication form was developed from an instrument used at Florida State University in the Department of Education. This form was adapted for use in this study. The form was adapted for use through Adobe printable document format (PDF) that was deemed most accessible through internet use. It was determined that firewall and security restrictions employed through school districts involved in the study might pose a potential problem to response through using an internet based web instrument.

When the form was adapted for use in this study, the researcher contacted each cooperating center, via land line used for the fall 2006 semester to ascertain how the

cooperating teachers would best be able to receive and send data on communication between themselves and the student teacher. The cooperating centers were then mailed paper and electronic copies of the cover letter, consent form, communication form, and long and short directions of use for the communication form (see Appendix E & F). During this time a purposive selection of school districts was contacted throughout Texas and asked to fill out the communication form and send the form to the researcher via internet to test the use and restrictions employed by various school districts.

On the final day of the student teaching experience on campus, the student teachers were informed what the communication form was and directions on how to submit the form. Consent forms were provided to possible participants of the study so that consent could be given (see Appendix C). Communication was designated to take place at the end of every week of the field experience between the cooperating teacher and the student teacher. Cooperating teachers were asked to fill out the communication form through a formative evaluation of the student teacher and hold a conference between themselves and the student teacher to communicate strengths and weaknesses of the student teacher's performance through out the week. The student teachers were provided an explanation of the importance of the communication form during the initial meeting by the researcher as well as the importance of reflecting on this feedback in order to grow through their experience in student teaching to gain skills as a teacher.

Weekly reminder emails (see Appendix G) were sent to student teachers if communication forms were not received from their cooperating teachers. Student teachers were deemed more readily accessible by the researcher because of the

numerous responsibilities of the cooperating teachers. Cooperating teachers who encountered problems through the submittal process were contacted and problems corrected in order for the submission of the communication forms to occur. In addition, some cooperating centers were not able to send electronic data, so information was sent and accepted via United Stated postal service. The data were then entered and double checked by the researcher. Data were coded and saved in a secure location. When all data were received, information was loaded from Adobe to an Excel spreadsheet for data analysis. At the mid-point of the semester the researcher evaluated data received and contacted cooperating centers if problems had arose in sending communication form data. Problems were identified and corrected for the submittal process.

Analysis of Data

Data were analyzed using SPSS® 15.0 for Windows™ statistical package. Demographics and background characteristics were assessed using descriptive statistics – means, frequencies, standard deviations, skewness, and kurtosis. Correlation statistics were used to examine relationships between teaching efficacy, student teacher's perceptions of student teacher-cooperating teacher relationships, and contextual variables under study in this research. In order to ascertain the influence of the independent variable, use of the communication tool, upon the dependent variables (teaching efficacy and student perceptions of level of relationships), data collected on contextual variables (gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center) were used as covariates during data analysis. Multivariate analysis of variance (MANOVA) was run

and then repeated measures mixed design and repeated measures analysis of covariance were utilized to further delineate the findings of this study.

Data were collected from the participants on the independent variable (communication tool data) of study every week for the duration of the student teaching field experience for the treatment group (fall 2006) only. This information was compiled and entered into a data base for statistical analysis. The data were collected for the duration of the semester to determine the level of implementation of the intervention. Those cooperating teachers who did not turn in forms weekly were acknowledged as not implementing the communication form (independent variable), that is, the treatment was not administered by the cooperating teachers. Accordingly, data from the students who were not administered the treatment were not used in analysis for this study as part of the defined treatment group.

Chapter Summary

This chapter sought to describe the methods employed to answer the research questions outlined in this study. The research design, procedures, population and sample, instrumentation, data collection, and data analysis were addressed in order to describe methods employed in this study. This study is a quasi-experimental design that employs a non-random sample in a multiple time-series design (Campbell & Stanley, 1963). Inferential statistics were employed since it is assumed the sample is representative of all student teachers and the researcher can therefore make the assumption that the results from this study can be inferred and findings may be generalized with caution to other populations (Oliver & Hinkle, 1982).

The population of the study was considered to be all student teachers in agricultural education at Texas A&M University. The sample consisted of those student teachers enrolled in field experience (AGSC 436) during the semesters of fall 2004, fall 2005, and fall 2006. This purposive sample was chosen to represent student teachers engaged in field experiences. Numerous instruments were employed to assess the variables of interest in this study which included teaching efficacy, demographics and background, and communication form. Teaching efficacy data were collected at three points during each semester of the research design.

Communication form data were collected during the field experience during the fall 2006 semester only. The data were used to ascertain that the treatment was implemented to the treatment group (i.e., treatment fidelity). The data were collected each of the eleven weeks of the field experience through a communication form available via the internet or through print.

Finally, data were analyzed using SPSS® 15.0 for Windows™ statistical package. Descriptive statistics were performed to analyze the demographics and background of the participants in the study. Correlations were used to describe relationships between selected variables in this research. After correlations were examined, multivariate analysis of variance and repeated measures mixed design and repeated measures of covariance were utilized to further delineate the findings of this study.

CHAPTER IV

RESULTS AND DISCUSSION

Chapter I outlined the basis for conducting this study. A historical perspective of learning was presented. In addition current research in the area of teacher preparation was offered. The purpose of this research study and research hypotheses were given. Assumptions were outlined, limitations were stated, and key terms were defined pertaining to this study.

Chapter II provided a theoretical and conceptual framework for studying this topic. A thorough background on self-efficacy, teaching efficacy, teaching efficacy measurement, communication theory, and student teacher and cooperating teacher relationships were presented. A conceptual model guiding this study was offered based upon a thorough review of the literature.

Chapter III described the research methodology employed in this study. Through a discussion of the research methodology, the research design, procedures, population and sample, instrumentation, data collection, and data analysis were presented. This study was a quasi-experimental design that employed a non-random sample in a multiple time-series design (#14) (Campbell & Stanley, 1963).

The purpose of this study was to examine the effects of structured communication on teaching efficacy and the relationship between the student teacher and cooperating teacher, during the student teaching experience. A secondary purpose was to explore relationships between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, and

placement at cooperating center.

Hypotheses

Following a review of the literature, the following null and alternative hypotheses were developed to guide this study.

Null Hypotheses

Ho_1: There is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ho_2: There is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool.

Ho_3: There is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ho_4: There is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ho_5: There is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Alternative Hypotheses

Ha_1: There is a difference in teaching efficacy and student teacher's perception of

their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ha_2: There is a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool.

Ha_3: There is a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ha_4: There will be a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ha_5: There will be a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

This chapter presents the findings obtained in this study. Results presented address hypotheses of this study that examined the effects of implementing structured communication on teaching efficacy, and the relationship between the student teacher and cooperating teacher, during the student teaching experience. Results are also presented which address hypotheses that explore the relationship between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Data were collected during the semesters of fall 2004 (n= 35), fall 2005 (n = 27), and fall 2006 (n = 20). Selected semesters represent the field experience enrollment (AGSC 436) of teacher education candidates enrolled in the Agricultural Leadership, Education, and Communications department at Texas A&M University. Teaching efficacy data and perceptions of relationship were collected at three points during the student teaching semester. Background and demographics data were collected at the first assessment of teaching efficacy and perceptions of the relationship.

The population of study was past, present, and future student teachers who enrolled or will enroll in field experience (AGSC 436) at Texas A&M University. A purposive sample was chosen to represent student teachers engaged in field experiences. This sample included three semesters of student teachers during the student teaching phase of their teacher education program. The control group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semesters of 2004 (n = 35) and 2005(n = 27). The treatment group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semester of 2006 (n = 20).

The first measurement of teaching efficacy (O_1) was taken immediately before the subjects began the field experience (student teaching). The second measurement of teaching efficacy (O_2) was taken during the 5th week of the 11-week field experience at the mid-semester conference of student teachers, which was facilitated by teacher education faculty (university supervisors) of Texas A&M University. The third (O_3) and final teaching efficacy measurement was taken at the end of the 11-week field

experience. The intervention or experimental variable (X_1) was introduced and incorporated weekly during the full field experience of the fall 2006 teacher education student teaching semester.

Data were analyzed for normalcy (SPSS procedure descriptive, explore) and an outlier was identified when descriptive statistics were employed. Investigation of the data revealed through box plot analyses identified the specific case contained in the treatment group (n=20). This case was identified and removed from further data analysis in this study (N=81, treatment group (n=19). Judd and McClelland (1989) argue that outlier removal is desirable, honest, and important.

Sample Demographics

Demographics included gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center. Demographics are presented for the control group, the treatment group, and the combined groups of control and treatment represented as "all groups." The control group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semesters of 2004 (n= 35) and 2005 (n= 27). The treatment group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semester of 2006 (n= 19).

Gender

For all groups in this study, 81 subjects are described. Table 4-1 illustrates the gender composition for the groups of study. Of those respondents, a majority (61.7%) responded that their gender were female. The rest of the respondents (38.3%) indicated

gender as male. For the control group (*n* =62) used in this study, 38 of the respondents were female (61.3%) and 24 indicated that they were male (38.7%). For the treatment group (*n* =19), a majority of respondents were female (63.2%) and seven were male (36.8%).

Table 4-1

Gender of Student Teachers (*N*=81)

	All Groups		Control Group		Treatment Group	
Gender	*f*	*P*	*f*	*P*	*f*	*P*
Male	31	38.3	24	38.7	7	36.8
Female	50	61.7	38	61.3	12	63.2
Total	81	100.0	62	100.0	19	100.0

Age

Age was another variable under study described relating to the identified groups of study. The mean age of all groups (*N*=81) in this study were 23 (*M*=23.08, *SD*=3.42) with a range of 21 to 47. The mean age of the control group (*n*=62) was 23 (*M*=23.23, *SD* =3.83) with a range of 21 to 47. The mean age of the treatment group (*n*=19) was 23 (*M*=22.63, *SD*=1.34) with a range of 21 to 26.

Ethnicity

Another demographic variable under study was ethnicity classification of participants. Participants of the study were described as Hispanic/Latino, Native

Hawaiian or other Pacific Islander, or White. Table 4-2 portrays all participants (*N*=81) of the study responding to their ethnicity during the data collection process of this study. The majority (96.3%) of respondents indicated that they were white. The second largest percentage (2.5%) of respondents indicated that they were Hispanic/Latino. This was closely followed by one respondent who indicated they were Native Hawaiian or other Pacific Islander (1.2%).

The ethnicity of the control group (*n*=62) is also shown in Table 4-2. The majority (95.2%) of respondents indicated that they were white. The second largest percentage (3.2%) of respondents indicated that they were Hispanic/Latino. This was closely followed by one respondent who indicated they were Native Hawaiian or other Pacific Islander (1.6%).

Ethnicity is also shown for the participants in the treatment group (*n*=19) in Table 4-2. All respondents (100%) in the treatment group indicated that they were of white descent.

Table 4-2

Ethnicity of Student Teachers (*N*=81)

	All Groups		Control Group		Treatment Group	
Ethnicity	*f*	*P*	*f*	*P*	*f*	*P*
Hispanic/Latino	2	2.5	2	3.2	0	0.0
Native Hawaiian or other Pacific Islander	1	1.2	1	1.6	0	0.0
White	78	96.3	59	95.2	19	100.0
Total	81	100.0	62	100.0	19	100.0

Semesters Enrolled

Another important demographic variable used to describe the sample represented, were the number of semesters that respondents were enrolled in secondary agricultural science. Table 4-3 illustrates all participants (*N*=81) of the study responding to the number of semesters enrolled in secondary agricultural science. The greater number (44.4%) of respondents indicated they had taken 7-8 semesters of agricultural science while in secondary schools. The second largest percentage (21.0%) of respondents indicated never enrolled in agricultural science in high school. This was closely followed by 12 respondents who indicated they had taken 3-4 semesters (14.8%) and ten respondents who indicated they taken 5-6 semesters (12.4%). The least number of respondents (7.4%) indicated they had enrolled in only 1-2 semesters of secondary agricultural science.

Table 4-3

Number of Semesters Enrolled in Secondary Agricultural Science by All Student Teacher (*N* = 81)

	All Groups		Control Group		Treatment Group	
Semesters Enrolled	*f*	*P*	*f*	*P*	*f*	*P*
None	17	21.0	13	21.0	4	21.1
1-2	6	7.4	5	8.1	1	5.3
3-4	12	14.8	12	19.4	0	0
5-6	10	12.3	7	11.3	3	15.8
7-8	36	44.4	25	40.3	11	57.9
Total	81	100.0	62	100.0	19	100.0

The control group (*n*=62) used in this study responding to the number of semesters enrolled in secondary agricultural science is outlined in Table 4-3. A greater number (40.3%) of respondents indicated they had taken 7-8 semesters of agricultural science. The second largest percentage (21%) of respondents indicated that they never enrolled in agricultural science in high school which was closely followed by 12 respondents who indicated they had taken 3-4 semesters (19.4%). There were seven respondents who indicated they had taken 5-6 semesters (11.3%). The smallest number of respondents indicated they had enrolled in only 1-2 semesters of secondary agricultural science (8.1%).

The treatment group is described by participants of the study responding to the

number of semesters enrolled in secondary agricultural science (see Table 4-3). A majority (57.9%) of respondents indicated that they had taken 7-8 semesters of agricultural science. The second largest percentage (21.1%) of respondents indicated they had never enrolled in agricultural science in high school. This was closely followed by three respondents who indicated they had taken 5-6 semesters (15.8%) and one respondent who indicated having taken 1-2 semesters (5.0%). There were no respondents who indicated enrollment in 3-4 semesters of secondary agricultural science in secondary schools.

Academic Standing

Further demographic data were collected on academic standing of participants in the study. Academic standing responses were classified as undergraduates, postgraduates seeking only certification, postgraduate seeking certification and a second undergraduate degree, and graduate seeking certification and a graduate degree. Table 4-4 illustrates all participants of the study (*N*=81) responding to their academic standing during the data collection process of this study. The majority (74.1%) of respondents indicated that they were undergraduates. The second largest percentage (9.9%) of respondents indicated that they were graduates seeking certification and a graduate degree. This was closely followed by seven respondents who indicated they were classified as postgraduates seeking only certification (8.6%) and six respondents who indicated they were postgraduates seeking certification and a second undergraduate degree (7.4%).

Also shown in Table 4-4 are participants in the control group (*n*=62) responding to their academic standing during the data collection process. The majority (71.0%) of

respondents indicated that they were undergraduates. The second largest percentage (11.3%) of respondents indicated that they were postgraduates seeking only certification. This was closely followed by six respondents who indicated they were classified as postgraduates seeking certification and a second undergraduate degree (9.7%) and five respondents who indicated they were graduates seeking certification and a graduate degree (8.1%).

Participants in the treatment group (n=19) of the study responding to their academic standing during the data collection process are also shown in Table 4-4. The majority (84.2%) of respondents indicated that they were undergraduates. The rest of the respondents indicated they were graduates seeking certification and a graduate degree (15.8%).

Table 4-4

Academic Standing of All Student Teachers (*N*=81)

	All Groups		Control Group		Treatment Group	
Academic Standing	*f*	*P*	*f*	*P*	*f*	*P*
Undergraduate	60	74.1	44	71.0	16	84.2
Postgraduate seeking only certification	7	8.6	7	11.3	0	0.0
Postgraduate seeking certification and second undergraduate degree	6	7.4	6	9.7	0	0.0
Graduate seeking certificate and graduate degree	8	9.9	5	8.1	3	15.8
Total	81	100.0	62	100.0	19	100.0

Agricultural Work Experience

Another demographic variable under study was agriculture work experience of the student teachers in this study. Respondents' responses were classified as none, mostly avocational, part-time employment, full-time employment (no more than 6 months of continuous employment), and full-time employment (more than 6 months of continuous employment). Table 4-5 describes all participants (*N*=81) of the study responding to their agriculture work experience during the data collection process of this study. The largest percentage (38.3%) of respondents indicated that prior agriculture work experience was avocational. The second largest percentage (21.0%) of respondents

indicated prior agriculture work experience as part-time employment. This was closely followed by 15 respondents who indicated prior work experience as full-time as no more than 6 months (18.5%) and 14 who indicated prior work experience as full-time at more than 6 months (17.3%). The least number of responses (4.9%) were indicated in the category of no prior agriculture work.

Table 4-5 also portrays participants in the control group (*n*=62) of the study responding to their agriculture work experience. The largest percentage (33.9%) of respondents indicated that prior agriculture work experience was avocational. This was followed by the number of respondents in two different categories (22.6%) who indicated prior work experience as full-time as no more than 6 months and part-time employment. This was closely followed by nine respondents whom indicated prior agriculture work experience as full-time employment (more than 6 months) (14.5%). The smallest percentage of respondents (6.5%) indicated in the category of no prior agriculture work.

Also described in Table 4-5 are the treatment group responding to their agriculture work experience. The largest percentage (52.6%) of respondents indicated mostly avocational work experience. This was followed by five of the respondents whom indicated full-time employment (more than 6 months) (26.3%). This was closely followed by three respondents whom indicated prior agriculture work experience as part-time employment (15.8%). The smallest percentage of respondents (5.3%) indicated full-time employment (no more than 6 months).

Table 4-5

Agriculture Experience of All Student Teachers (*N*=81)

	All Groups		Control Group		Treatment Group	
Agriculture Experience	*f*	*P*	*f*	*P*	*f*	*P*
None	4	4.9	4	6.5	0	0.0
Mostly avocational	31	38.3	21	33.9	10	52.6
Part-time employment	17	21.0	14	22.6	3	15.8
Full-time employment (no more than 6 months)	15	18.5	14	22.6	1	5.3
Full-time employment (more than 6 months)	14	17.3	9	14.5	5	26.3
Total	81	100.0	62	100.0	19	100.0

Placement

Placement of student teachers at cooperating centers during the student teaching experience represented another variable under study. Student teachers in this study were placed at cooperating centers by themselves, or placed with another student teacher. Table 4-6 shows placement for the groups in this study. Of those respondents for all groups in this study, a majority (51.9%) were placed with another student teacher. The rest of the student teachers were placed by themselves (48.1%). For the control group (*n*=62) used in this study, a majority of the student teachers were placed with another student teacher (53.2%) and the rest were placed by themselves (46.8%). The treatment

group (*n*=19) in this study indicated that ten student teacher were placed at single teacher cooperating centers (52.6%) and nine were placed at multiple placement cooperating centers (47.4%).

Table 4-6

Placement of Student Teachers at Cooperating Center (*N*=81)

	All Groups		Control Group		Treatment Group	
Placement	*f*	*P*	*f*	*P*	*f*	*P*
Alone	39	48.1	29	46.8	10	52.6
Multiple Placement	42	51.9	33	53.2	9	47.4
Total	81	100.0	62	100.0	19	100.0

Teaching Efficacy Descriptive Data

Teaching efficacy was assessed using the Teacher's Sense of Efficacy Scale (often referred to as the Ohio State Teacher Efficacy Scale (OSTES) developed by Tschannen-Moran and Woolfolk Hoy (2001). This instrument measures three constructs on teaching efficacy which were engagement, instructional strategies, and classroom management. Data were collected at three points during the student teaching field experience for each group. Descriptive data will be presented for the control group, the treatment group, and the combined groups. The control group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semesters of 2004 (*n*= 35) and 2005 (*n* = 27). The treatment group consisted of

student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semester of 2006 (n = 19). Data presented for teaching efficacy will include mean (M), standard deviation (SD), skewness, and kurtosis to describe the data.

Engagement Construct

The engagement construct of the teaching efficacy measurement shown in Table 4-7 yielded data for the control, treatment, and an overall measurement of the groups of study. Data were measured during three points of the field experience the respondents were in this study. Mean scores for the engagement construct in the control group (n=62) for the three measurement points were 7.09 (SD = .92), 6.60 (SD = .92), and 7.29 (SD = .93), respectively. Mean scores for the treatment group at the three measurement points were 7.07 (SD = .92), 6.43 (SD = 1.02), and 6.71 (SD = .75), respectively.

Through further data analysis (see Table 4-8), it was found that skewness and kurtosis on the third measurement of the control group sample indicated a significant finding (see Figures 4-1 and 4-2). Skewness statistic on the third measurement was -1.04 with a standard error of .31. This indicated that the distribution of data for this measurement was significantly negatively skewed. In addition, the control group's measurement on the third measurement for kurtosis showed a statistic of 1.49 with a standard error of .61. This indicated a leptokurtic, significantly non normal sample. Because of these findings z scores were calculated. Skewness z score was calculated at 3.35 and kurtosis z score was calculated 2.44. Field (2005) stated that z score less than 2.58 for small sample sizes such as shown in these groups (n=62, n=19) are acceptable. The z score calculations for kurtosis did fall under the range stipulated by Field (2005)

and for significance in this study (p <.05). For this study the overall teaching efficacy measurement, rather than the engagement construct, is used for data analysis and it showed no significant findings for skewness and kurtosis (z score less than 2.58).

Table 4-7

Comparison of Means of Teaching Efficacy of the Engagement Construct

	1st measurement		2nd measurement		3rd measurement	
	M	*SD*	*M*	*SD*	*M*	*SD*
Control Group	7.09	.92	6.60	.92	7.29	.93
Treatment Group	7.07	.79	6.43	1.02	6.71	.75
Overall Group	7.08	.88	6.56	.95	7.15	.92

Table 4-8

Distributions Around the Mean of Teaching Efficacy of the Engagement Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.09	.92	-.00	.31	-.39	.61
2nd measurement	6.60	.92	-.25	.31	-.27	.62
3rd measurement	7.29	.93	-1.04	.31	1.49	.61
Treatment Group						
1st measurement	7.07	.79	-.62	.52	-.48	1.01
2ndmeasurement	6.43	1.02	.02	.52	.00	1.01
3rd measurement	6.71	.75	.30	.52	.23	1.01
Overall						
1st measurement	7.08	.88	-.09	.27	-.38	.54
2nd measurement	6.56	.95	-.19	.27	-.29	.54
3rd measurement	7.15	.92	-.66	.27	.53	.54

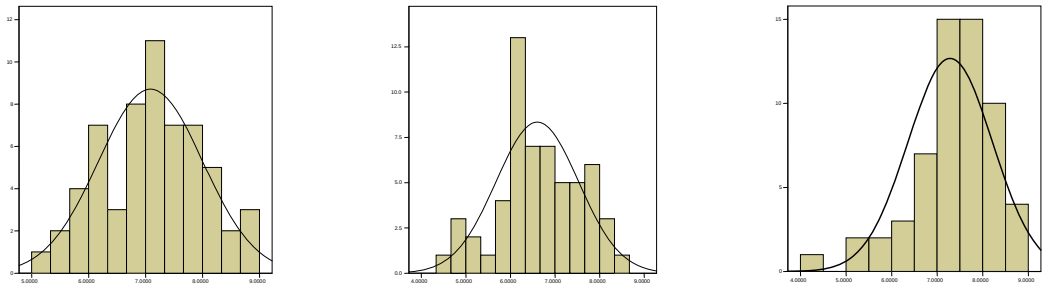

Figure 4-1. Control group teaching efficacy engagement distributions (viewing from left to right: first measurement, second measurement, and third measurement).

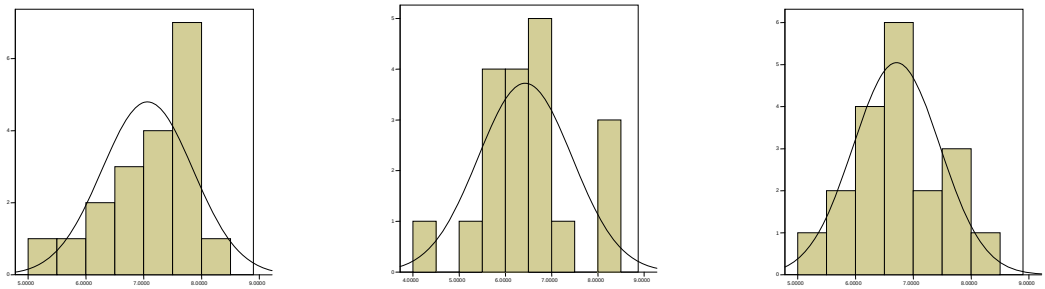

Figure 4-2. Treatment group teaching efficacy engagement distributions (viewing from left to right: first measurement, second measurement, and third measurement).

Instruction Construct

The instruction construct of the teaching efficacy measurement shown in Table 4-9 yielded data for the control, treatment, and an overall measurement of the groups of study. Data were collected during three points of the field experience of the respondents in this study. Mean scores for the instruction construct in the control group (n =62) for the three measurement points were 7.21 (SD = .89), 6.98 (SD = .96), and 7.48 (SD = .91), respectively. Mean scores for the treatment group at the three measurement points

were 6.88 (SD = .78), 6.91 (SD = .73), and 6.92 (SD = .83), respectively. It should be noted that there is seen an increase at the second measurement on the mean score for the instruction construct for the treatment group. There was also seen an increase from the second measurement to the third measurement for the instruction construct of teaching efficacy for the treatment group that was not seen in the control group measurements.

Through further data analysis (see Table 4-10), it was found that skewness and kurtosis on all measurements of the treatment and control group indicated no significant findings and the data are normally distributed (see Figures 4-3 and 4-4).

Table 4-9

Comparison of Means of Teaching Efficacy of the Instruction Construct

	1st measurement		2nd measurement		3rd measurement	
	M	*SD*	*M*	*SD*	*M*	*SD*
Control Group	7.22	.89	6.98	.96	7.46	.91
Treatment Group	6.88	.78	6.91	.73	6.92	.83
Overall Group	7.14	.87	6.96	.90	7.33	.92

Table 4-10

Distributions Around the Mean of Teaching Efficacy of the Instruction Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.22	.89	.02	.31	-.39	.61
2nd measurement	6.98	.96	-.45	.31	-.35	.62
3rd measurement	7.46	.91	-.54	.31	.05	.61
Treatment Group						
1st measurement	6.88	.78	-.88	.52	1.08	1.01
2nd measurement	6.91	.73	-.26	.52	-.72	1.01
3rd measurement	6.92	.83	-.79	.52	.57	1.01
Overall						
1st measurement	7.14	.87	-.07	.27	-.05	.54
2nd measurement	6.96	.90	-.41	.27	-.32	.54
3rd measurement	7.33	.92	-.48	.27	.04	.54

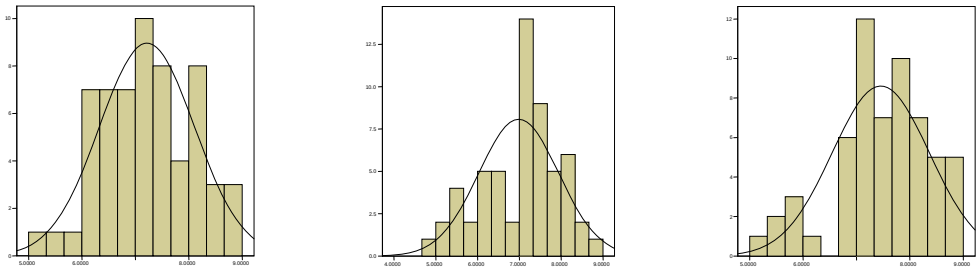

Figure 4-3. Control group teaching efficacy instruction distributions (viewing from left to right: first measurement, second measurement, and third measurement).

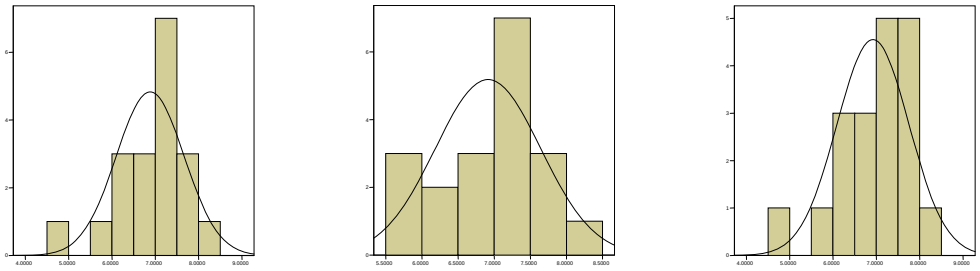

Figure 4-4. Treatment group teaching efficacy instruction distributions (viewing from left to right: first measurement, second measurement, and third measurement).

Classroom Management Construct

The classroom management construct of the teaching efficacy measurement shown in Table 4-11 yielded data for the control, treatment, and an overall measurement of the groups of study. Data were collected during three points of the field experience the respondents were in this study. Mean scores for the management construct in the control group (*n*=62) for the three measurement points were 7.30 (SD = .87), 6.94 (SD = 1.10), and 7.42 (SD = .90), respectively. Mean scores for the treatment group at the three measurement points were 7.21 (SD = .86), 6.88 (SD = 1.15), and 6.88 (SD = .82), respectively. It should be noted that like the mean scores of the control group from measurement one and two there was a decrease in mean scores of the treatment group. Unlike the control group in which the mean score rose from second measurement to the third measurement, the treatment score stayed static.

Through further data analysis (see Table 4-12), it was found that skewness on the third measurement of the control group's sample indicated a significant finding (see Figures 4-5 and 4-6). Skewness statistic on the third measurement was -.83 with a

standard error of .31. This indicated that distribution of data for this measurement is significantly negatively skewed. Because of this finding a *z* score was run. Skewness *z* score was calculated at 2.68. Field (2005) stated that *z* scores less than 2.58 for small sample sizes such as in this group (n=62) are acceptable. The *z* score calculations for this measurement did not fall under that range for significance in this study ($p < .05$). However, for this study the overall measurement, rather than the classroom management, is used for data analysis and it showed no significant findings for skewness or kurtosis.

Table 4-11

Comparison of Means of Teaching Efficacy of the Management Construct

	1st measurement		2nd measurement		3rd measurement	
	M	*SD*	*M*	*SD*	*M*	*SD*
Control Group	7.30	.87	6.94	1.10	7.42	.90
Treatment Group	7.21	.86	6.88	1.15	6.88	.82
Overall Group	7.29	.87	6.92	1.10	7.29	.91

Table 4-12

Distributions Around the Mean of Teaching Efficacy of the Management Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.30	.87	-.31	.31	-.03	.61
2nd measurement	6.94	1.10	-35	31	.19	.62
3rd measurement	7.42	.90	-.83	.31	1.01	.61
Treatment Group						
1st measurement	7.21	.86	-.04	.52	-.73	1.01
2nd measurement	6.88	1.15	-.21	.52	-.37	1.01
3rd measurement	6.88	.82	.28	.52	-1.07	1.01
Overall						
1st measurement	7.29	.87	-.24	.27	-.25	.54
2nd measurement	6.92	1.10	-.31	.27	-.03	.54
3rd measurement	7.29	.91	-.52	.27	.06	.54

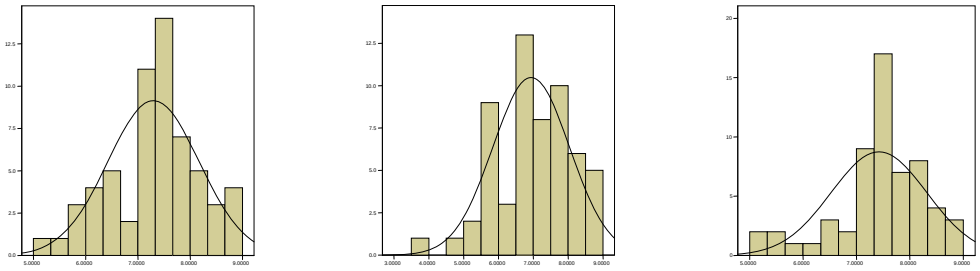

Figure 4-5. Control group teaching efficacy classroom management distributions (viewing from left to right: first measurement, second measurement, and third measurement).

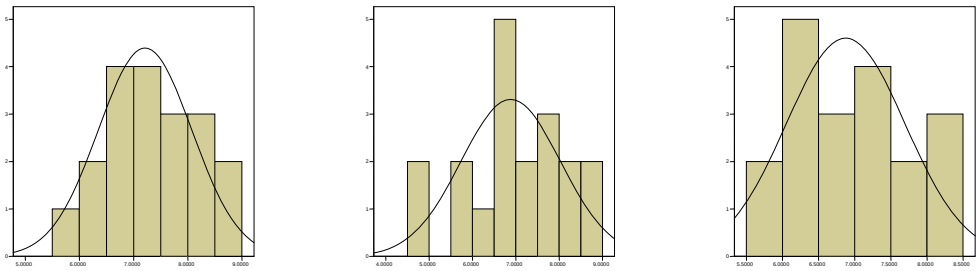

Figure 4-6. Treatment group teaching efficacy classroom management distributions (viewing from left to right: first measurement, second measurement, and third measurement).

Overall Teaching Efficacy

All measured constructs total overall teaching efficacy which is in Table 4-13 for the control, treatment, and combined groups. Data were collected during three points of the field experience of the respondents in this study. Mean scores for total measurement in the control group (*n*=62) for the three measurement points were 7.20 (SD = .86), 6.84 (SD = .92), and 7.38 (SD = .87), respectively. Mean scores for the treatment group at the

three measurement points were 7.05 (SD = .75), 6.74 (SD = .83), and 6.84 (SD = .72), respectively.

Through further data analysis (see Table 4-14), it was found that skewness on the third measurement of the control group sample indicated a significant finding (see Figures 4-7 and 4-8). Skewness statistic on the third measurement was -.89 with a standard error of .31. This indicates that the distribution of data for this measurement is significantly negatively skewed. Because of this finding *z* scores were calculated. Skewness *z* score was calculated at 2.87. Field (2005) stated that *z* score less than 2.58 for small sample sizes such as in this group (n=62) are acceptable. The *z* score calculations for this measurement does not fall under than range for significance in this study (p <.05). For this study the overall measurement is used for data analysis and it showed a significant finding for skewness. A z score was calculated for overall skewness for the third measurement and it showed a value of 2.48 which fell under the level of 2.58 for significance less than .05.

Table 4-13

Comparison of the Means of Teaching Efficacy of All Measured Constructs

	1st measurement		2nd measurement		3rd measurement	
	M	*SD*	*M*	*SD*	*M*	*SD*
Control Group	7.20	.86	6.84	.92	7.38	.87
Treatment Group	7.05	.75	6.74	.83	6.84	.72
Overall Group	7.17	.84	6.82	.89	7.25	.87

Table 4-14

Distributions Around the Mean of Teaching Efficacy of All Measured Constructs

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.20	.86	-.10	.31	-.26	.61
2nd measurement	6.84	.92	-.30	.31	-.29	.62
3rd measurement	7.38	.87	-.89	.31	.89	.61
Treatment Group						
1st measurement	7.05	.75	-.83	.52	.06	1.01
2nd measurement	6.74	.83	-.34	.52	.13	1.01
3rd measurement	6.84	.72	-.20	.52	.03	1.01
Overall						
1st measurement	7.17	.84	-.19	.27	-.17	.54
2nd measurement	6.82	.89	-.29	.27	-.26	.54
3rd measurement	7.25	.87	-.61	.27	.23	.54

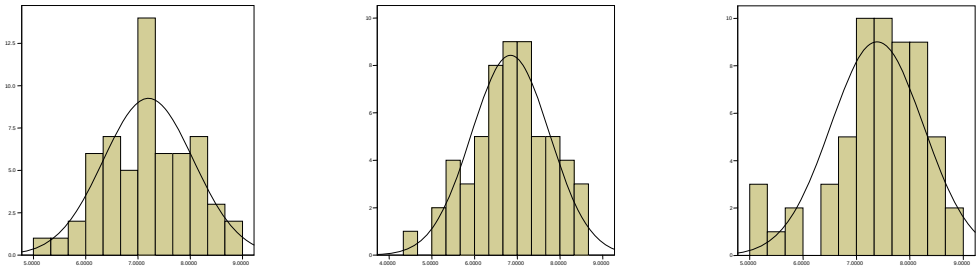

Figure 4-7. Control group teaching efficacy overall distributions (viewing from left to right: first measurement, second measurement, and third measurement).

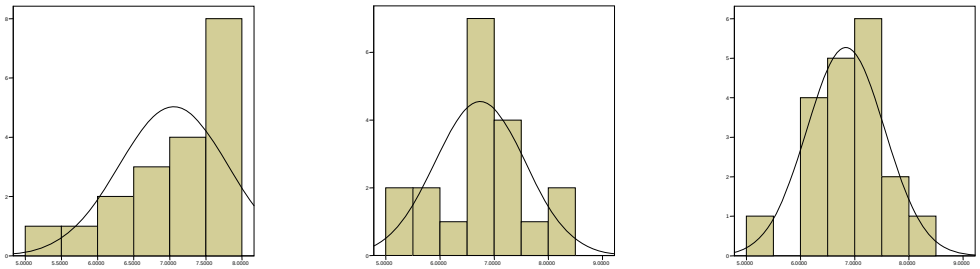

Figure 4-8. Treatment group teaching efficacy overall distributions (viewing from left to right: first measurement, second measurement, and third measurement).

Perceptions of Relationship Exhibited

The perceptions of the student teacher on level of relationship exhibited by the cooperating teacher shown in Table 4-15 yielded data for the control, treatment, and an overall measurement of the groups of study. Data were collected during three points of the field experience of the respondents in this study. Mean scores for the perceptions of the student teacher on level of relationship exhibited by the cooperating teacher in the control group (*n*=62) for the three measurement points were 4.23 (SD = .63), 3.82 (SD =

1.04), and 3.89 (SD = 1.04), respectively. Mean scores for the treatment group at the three measurement points were 3.88 (SD = .79), 3.91 (SD = .83), and 3.77 (SD = .94), respectively. These data showed a decrease in mean scores by the control group from first measurement to the second measurement and then an increase from the second measurement to the third. The data for the treatment group showed a decrease from second measurement to the third measurement as the control group data also indicated an increase in mean score. The treatment group showed an increase from the first measurement to the second measurement in mean score whereby the control group's mean scores indicated a decrease in the perceptions of the student teacher on level of relationship exhibited by the cooperating teacher.

Through further data analysis (see Table 4-16), it was found that skewness on the second and third measurement of the control group sample indicated a significant finding (see Figures 4-9 and 4-10). Skewness statistic on the second and third measurement was -.98 and -.99 with a standard error of .31 each. This indicates that the distribution of data for this measurement is significantly negatively skewed.

The treatment group also indicated significant findings of skewness. The first two measurements of skewness were measured at -1.34 and -1.17 with a standard error of .52 each. This indicates that the distribution of data for this measurement is significantly negatively skewed.

Because of these findings, z scores were calculated. Skewness *z* score was calculated at 3.16 and 3.19 for the second and third measurement of the control group. Skewness *z* scores were calculated at 2.58 and 2.25 for the treatment group at the first

and second measurement. Skewness *z* scores for the overall group were calculated at 3.26, 3.81, and 3.52 for each measurement. Field (2005) stated that *z* score less than 2.58 for small sample sizes such as in these groups (n=62, n=19) are acceptable. The *z* score calculations for these measurements of the control group and the overall measurements do not fall under than range for the significance value in this study (p <.05). This study used the overall measurement for data analysis and data showed no significant findings for kurtosis.

Table 4-15

Comparison of the Means of Perceptions of Student Teacher Level of Relationship Exhibited by Cooperating Teacher

	1st measurement		2nd measurement		3rd measurement	
	M	*SD*	*M*	*SD*	*M*	*SD*
Control Group	4.23	.63	3.82	1.04	3.89	1.04
Treatment Group	3.88	.79	3.91	.83	3.77	.94
Overall Group	4.14	.68	3.84	.99	3.86	1.01

Table 4-16

Distributions Around the Mean of Perceptions of Student Teacher on Level of Relationship Exhibited by Cooperating Teacher

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.23	.63	-.50	.31	-.62	.61
2nd measurement	3.82	1.04	-.98	.31	.02	.62
3rd measurement	3.89	1.04	-.99	.31	-.17	.61
Treatment Group						
1st measurement	3.88	.79	-1.34	.52	1.89	1.01
2nd measurement	3.91	.83	-1.17	.52	1.37	1.01
3rd measurement	3.77	.94	-.96	.52	.67	1.01
Overall						
1st measurement	4.14	.68	-.88	.27	.95	.54
2nd measurement	3.84	.99	-1.03	.27	.24	.54
3rd measurement	3.86	1.01	-.95	.27	-.12	.54

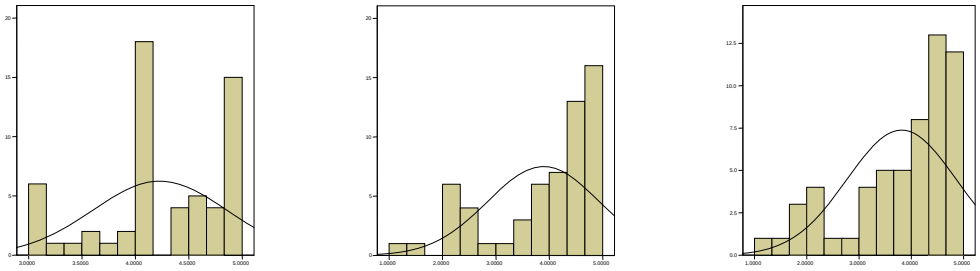

Figure 4-9. Control group student teacher perceptions of level of relationship exhibited by cooperating teacher distributions (viewing from left to right: first measurement, second measurement, and third measurement).

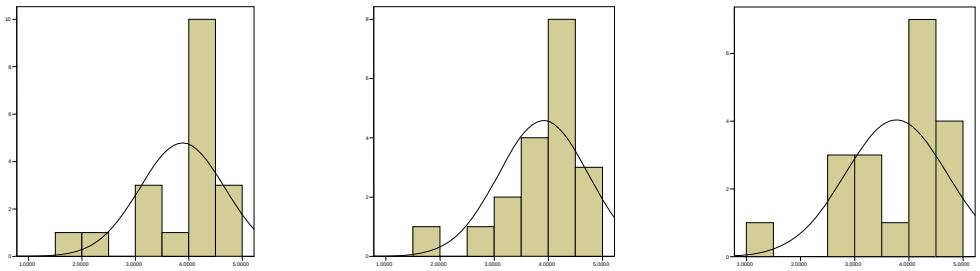

Figure 4-10. Treatment group student teacher perceptions of level of relationship exhibited by cooperating teacher distributions (viewing from left to right: first measurement, second measurement, and third measurement).

Correlations

Correlations were examined in order to see if any significant relationships were found among variables of study. Pearson Product correlations were examined for the variables of study. Davis (1971) identified correlations of .10 to .29 as low associations, .30 to .49 as moderate correlations, .50 to .69 as substantial correlations, and .70 or higher as very strong correlations. Correlational data were described for the control

group (n=62), treatment group (n=19), and all groups (N=81). Correlational analysis was conducted to examine the relationships between variables that will be used in further analysis.

Significant relationships found among variables for the control group (n=62) are described with a significance (p< .05) value less than .05 (see Table 4-17). There was a significant low positive relationships found in the control group for the relationship level exhibited by the cooperating teacher as described by the student teacher and the student teacher's efficacy level as measured by the Teachers Sense of Efficacy scale including all measurement (engagement, instruction, and management) constructs (r = .27) and a negative moderate correlation with age (r= -.33). Semesters of secondary agricultural science taken during secondary education was also positively correlated to agricultural work experience showing a moderate positive correlation (r = .34).

Table 4-17

Correlations of Variables in Control Group (*n*=62)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Relationship Level Exhibited (1)	1	.27*	-.33*	.23	-.08	.01
Teaching Efficacy (2)		1	-.06	-.19	-.06	-.20
Age (3)			1	-.17	.21	.23
Semesters of Secondary Ag Sc (4)				1	.20	.34*
Academic Standing (5)					1	.07
Agriculture Work Experience (6)						1

Note: * denotes that *p* significant < .05

A significant relationship was found among variables for the treatment group (*n*=19) using Pearson Product correlations and are indicated with a significance (*p*) value less than .05 (see table 4-18). A significant relationship was found in the treatment group in the relationship level exhibited by the cooperating teacher as described by the student teacher and age (*r* = .48). This relationship is described as a moderate positive correlation (Davis, 1971).

Table 4-18

Correlations of Variables in Treatment Group (*n*=19)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Relationship Level Exhibited (1)	1	.38	-.48*	.27	.04	-.43
Teaching Efficacy (2)		1	-.04	-.23	.03	.12
Age (3)			1	-.25	.34	.42
Semesters of Secondary Ag Sc (4)				1	-.05	-.33
Academic Standing (5)					1	.21
Agriculture Work Experience (6)						1

Note: * denotes that *p* significant < .05

Significant relationships found among variables for all groups (*N*=81) are described with a Pearson Product correlation, significance (*p*) value less than .05 (see Table 4-19). A significant relationship, low positive association was found in the relationship level exhibited by the cooperating teacher as described by the student teacher and the student teacher's efficacy level as measured by the Teachers Sense of Efficacy scale including all measurement (engagement, instruction, and management) constructs (*r* =.29) (Davis, 1971). In addition, a significant relationship, low positive association was found in the relationship level exhibited by the cooperating teacher as described by the student teacher and semesters of secondary agricultural science taken during secondary education (*r* =.23). Also a significant correlation existed between age and agricultural work experience (*r*=.23) described as a low positive association. The age of the student teacher was significantly, lowly negatively related to the relationship

level exhibited by the cooperating teacher as described by the student teacher (r = -.33). Point bi-serial correlations were run with identified variables and gender. Gender had a negative low correlation with age (r=-.25). Gender also had a negative moderate correlation (r= -.35) with agriculture work experience.

Table 4-19

Correlations of Variables in All Groups (N=81)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Relationship Level Exhibited (1)	1	.29*	-.33*	.23*	-.05	.10	-.04
Teaching Efficacy (2)		1	-.04	-.22	-.04	-.12	.04
Age (3)			1	-.17	.21	.23*	-.25*
Semesters of Secondary Ag Sc (4)				1	.13	.17	-.21
Academic Standing (5)					1	.11	.13
Agriculture Work Experience (6)						1	-.35*
Gender (7)							1

Note: * denotes that p significant < .05; Correlations with gender were point bi-serial (coded as male = 1, female =2)

Tests of Hypotheses

The use of parametric tests requires four basic assumptions to be met. The four assumptions are normally distributed data, homogeneity of variance, interval data, and independence. Hypothesis testing for this study utilizes the overall statistic of variables under study for data analysis. Through descriptive analysis it was shown that on behalf

of teaching efficacy and relationships, data were normally distributed except for the overall measurements of perception of level of relationship for skewness statistics (positively skewed). Field (2005) stated that through employing ANOVA data analysis procedures, ANOVA is robust to violations of its assumptions. Glass, et al., (1972) as cited in Hinkle, Wiersma, and Jurs (2003) stated "when populations sampled are not normal, the effect on the Type I error rate is minimal" (p.345).

Although a comparable non parametric test exists to determine if differences exist between independent groups, one could not be found to employ in a repeated measures design that compares groups. Therefore, parametric data analysis was deemed suitable and used to test hypotheses guiding this study.

The null hypothesis of no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers employ structured communication was tested using a Multivariate Analysis of Variance (MANOVA) procedure. Several assumptions must be met prior to running the MANOVA procedure. Homoscedasticity and equal group variances are assumptions that must be met for MANOVA analysis to yield tenable results. Box's M procedure was used to test homoscedasticity. If a statistically significant *F* value is revealed, homoscedasticity is not met (Field, 2005). Levene's test was used to test equal group variance. Levene's test also yields an *F* value. If this test yields a significant value then the group variances are unequal and MANOVA assumptions have not been met and results from testing can not be held tenable.

Further hypotheses were analyzed using repeated measures mixed design and

repeated measures with covariance. These hypotheses tested variables measured more than twice (within groups) over time. Assumption of sphericity (ε) must be met (p>.05) in order to use the sphericity assumed statistic (Mauchly's test). If sphericity is not met (p<.05), then Greenhouse-Geisser adjustment will be used in this study (Field, 2005). If significance (p<.05) less than .05 is revealed for sphericity assumed or Greenhouse-Geisser adjustment then the null hypothesis will not be held tenable and be rejected. If significance (p>.05) greater than .05 is revealed for either test statistic, then the null hypothesis will be held tenable and not be rejected. Further data analysis should be investigated into significant relationships through post tests and/or one-way ANOVAs to reveal where the significance lies for simple main effects (Tolson, 2006).

Null Hypothesis One

Null hypothesis one stated there is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool. This hypothesis was tested using the MANOVA procedure. Teaching efficacy and student's perception of the relationship with the cooperating teacher were the dependent variables of study. Independent variables were the use of a communication tool by the cooperating teachers. The Box's M test was not significant (p = .73). Levene's test was not significant (p = .64 and p = .23).

Table 4-20 shows the effects of the independent variable (structured communication) upon the dependent variables (teaching efficacy (TE) and relationship level (RL) measured at the beginning and the end of the data collection period was

shown with Pillai's Trace significance value of .06 with an $F = 2.881$. Effect size (η^2) was calculated at .07 and power at .55. The overall model was not significant. The null hypothesis was held tenable and not rejected.

Table 4-20

MANOVA Analysis of Variables of Study

Source		*df*	SS	MS	*F*	*p*	η^2	Power
TE	TE	1	5.39	5.39	9.89	.00	.12	.87
	RL	1	.03	.03	.03	.86	.01	.05
RL	TE	1	1.55	1.55	2.84	.10	.04	.38
	RL	1	9.93	9.93	10.60	.00	.13	.90
Treatment	TE	1	2.86	2.86	5.25	.03	.07	.62
	RL	1	.05	.05	.06	.81	.01	.06
Error	TE	73	39.79	.55				
	RL	73	68.43	.94				
Total	TE	77	4134.44					
	RL	77	1230.33					

Null Hypothesis Two

Null hypothesis two stated there is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool. To determine if a difference existed in teaching efficacy between groups, repeated measures mixed design analysis was used. Sphericity assumption was met (*Mauchly's W* = .98, $p = .55$). Analysis results for teaching efficacy (see Table 4-21) provided a significance level of $p = .048$ ($F = 3.11$). The significance level of $p < .05$ suggests there was a significant

difference in teaching efficacy throughout the three data collection points (see Figure 4-11). However, the overall model was not significant (Between Groups, F= 2.63 and p= .11). The null hypothesis was held tenable and not rejected.

Table 4-21

Teaching Efficacy Mean Comparison

Source	*df*	SS	MS	*F*	*p*	η^2	Power
Within Groups							
Teaching Efficacy(TE)	2	4.21	2.11	6.18	.01*	.08	.89
TE x Treatment Group	2	2.11	1.06	3.11	.048*	.04	.59
Error	148	50.39	.34				
Total	152						
Between Groups							
Treatment Group	1	3.81	3.81	2.63	.11	.03	.36
Error	74	107.47	1.45				

Note. Sphericity assumption met (*Mauchly's W* = .98, p = .56), *p significant < .05

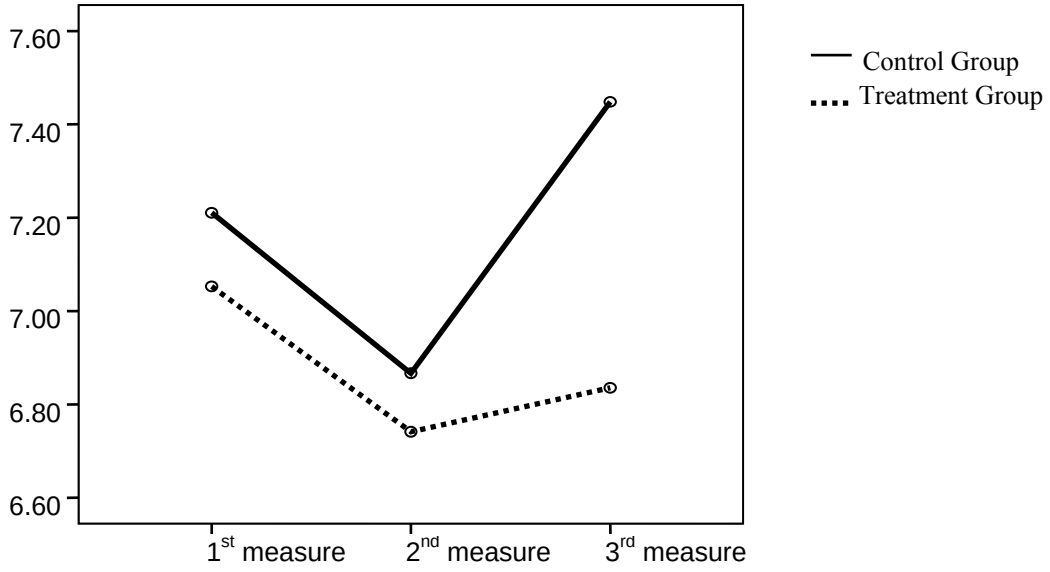

Figure 4-11. Mean plots of teaching efficacy for three measurement points of control and treatment groups.

Further data analysis revealed through within subject contrasts significance on treatment group and teaching efficacy from the second to the third measurement (see Table 4-22). Significance was also found in teaching efficacy of all groups from the first to the second measurement and from the second to the third measurement in this time series design. The contrast did reveal a significant interaction ($F = 5.49$, $p = .02$) between teaching efficacy and treatment group from level two to level three. Thus, the treatment and control groups differed in the way their teaching efficacy changed during the second half of their experience.

Table 4-22

Within Subject Contrasts for Teaching Efficacy

Source		*df*	SS	MS	*F*	*p*	η²	Power
Within Group Contrasts								
Teaching Efficacy(TE)	Level 1 vs. 2	1	6.12	6.12	9.20	.00*	.11	.85
	Level 2 vs. 3	1	6.51	6.51	10.57	.00*	.13	.89
TE x Treatment Group	Level 1 vs. 2	1	.02	.02	.02	.88	.00	.05
	Level 2 vs. 3	1	3.38	3.38	5.49	.02*	.07	.64
Error	Level 1 vs. 2	74	49.2	.67				
	Level 2 vs. 3	74	45.5	.62				

Note. **p* significant < .05

Null Hypothesis Three

Null hypothesis three stated there is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool. The repeated measures analysis was also used to test for differences in perceived level of importance of the relationship with cooperating teachers as seen by student teachers (see Table 4-23). This test produced a significance level of $p < .00$ (*Mauchly's W = .78*). In this case, the sphericity assumption was not met; therefore, the Greenhouse-Geisser adjustment was used. The significance level of $p = .16$ ($F = 1.88$) suggests that there were no differences in the student teachers perceptions of their cooperating teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points (see Figure 4-12). The overall

model was not significant (Between Groups, p= .59). The null hypothesis was held tenable and not rejected.

Table 4-23

Student Teacher Perceptions of Their Cooperating Teachers' Current Level of Relationship

Source	*df*	SS	MS	*F*	*p*	η^2	Power
Within Groups							
Relationship Level (RL)	1.63	1.80	1.10	2.34	.11	.03	.42
RL x Treatment Group	2	1.45	.72	1.88	.16	.03	.35
Error	119.31	55.98	.47				
Total	123						
Between Groups							
Treatment Group	1	.52	.52	.29	.59	.00	.08
Error	73	129.23	1.77				

Note. Sphericity assumption not met (*Mauchly's W* = .64, p = .03) [1]Greenhouse-Geisser adjustment used

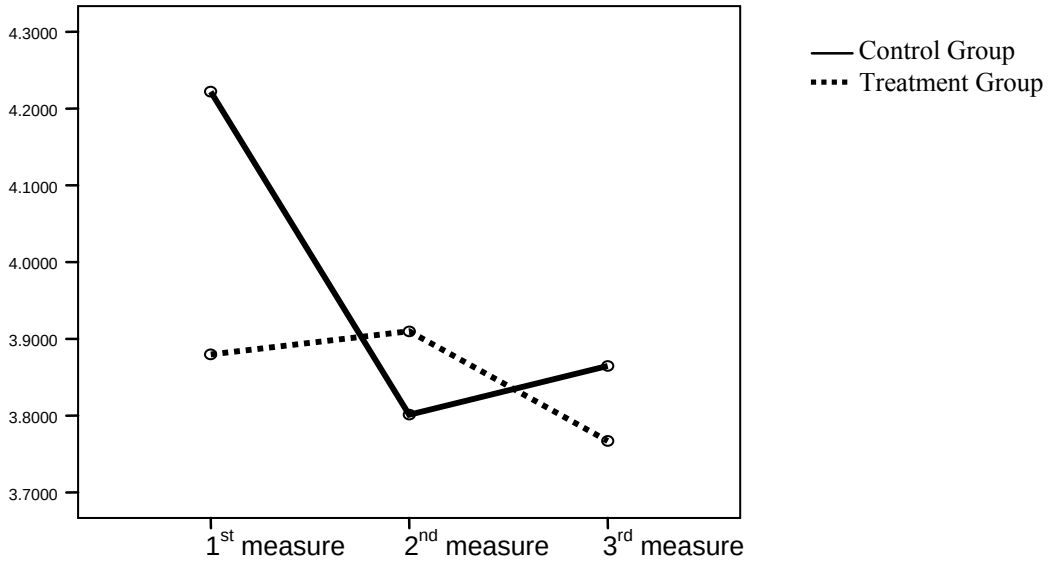

Figure 4-12. Mean plots of relationship level perception of student teacher for control and treatment groups.

Further data analysis revealed through within subject contrasts no significance on treatment group and perceptions of relationship of the cooperating teacher by the student teacher (see Table 4-24). It should be noted that overall both the treatment group and the control group displayed a reduction in their assessment of their perception of the relationship of the cooperating teacher through this time series design.

Table 4-24

Within Subject Contrasts for Relationship Level

Source		*df*	SS	MS	*F*	*p*	η^2	Power
Within Group Contrasts								
Relationship Level (RL)	Level 1 vs. 2	1	2.17	2.17	2.46	.12	.03	.34
	Level 2 vs. 3	1	.09	.09	.22	.64	.00	.08
RL x Treatment Group	Level 1 vs. 2	1	2.88	2.88	3.28	.07	.04	.43
	Level 2 vs. 3	1	.60	.60	1.47	.23	.02	.22
Error	Level 1 vs. 2	73	64.12	.88				
	Level 2 vs. 3	73	30.09	.41				

Null Hypothesis Four

Null hypothesis four state there is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

To determine if a difference existed in importance, repeated measures analysis was used. Sphericity assumption was met (*Mauchly's W* = .97, p = .40). Analysis results for teaching efficacy with covariates (see Table 4-25) provided a significance level of p = .04 (F = 3.29). The significance level of p = .04 suggests there were differences in teaching efficacy throughout the three data collection points (see Figure 4-13). The overall model was not significant (Between Groups, p= .25) therefore the null hypothesis

was held tenable and failed to reject.

Table 4-25

Teaching Efficacy Mean Comparison in the Presence of Contextual Variables

Source	*df*	SS	MS	*F*	*p*	η^2	Power
Within Groups							
Teaching Efficacy (TE)	2	.31	.15	.43	.65	.01	.12**
Interactions							
TE x Gender	2	.31	.16	.44	.64	.01	.12**
TE x Age	2	.94	.47	1.33	.27	.02	.28**
TE x Placement	2	.26	.13	.37	.69	.01	.11**
TE x AgSc Semesters	2	.69	.34	.97	.38	.01	.22**
TE x Academic Standing	2	.01	.01	.01	.99	.01	.05**
TE x Ethnicity	2	.06	.03	.08	.92	.01	.06**
TE x Ag Work Experience	2	.40	.20	.56	.57	.01	.14**
TE x Treatment Group	2	2.32	1.16	3.29	.04*	.05	.62**
Error	134	47.36	.35				
Total	152						
Between Groups							
Treatment	1	1.99	1.99	1.36	.25	.02	.21**
Error	67	97.97	1.46				

Note. Sphericity assumption met (*Mauchly's W* = .98, *p* = .42), **p* significant < .05, ** power computed using alpha = .05.

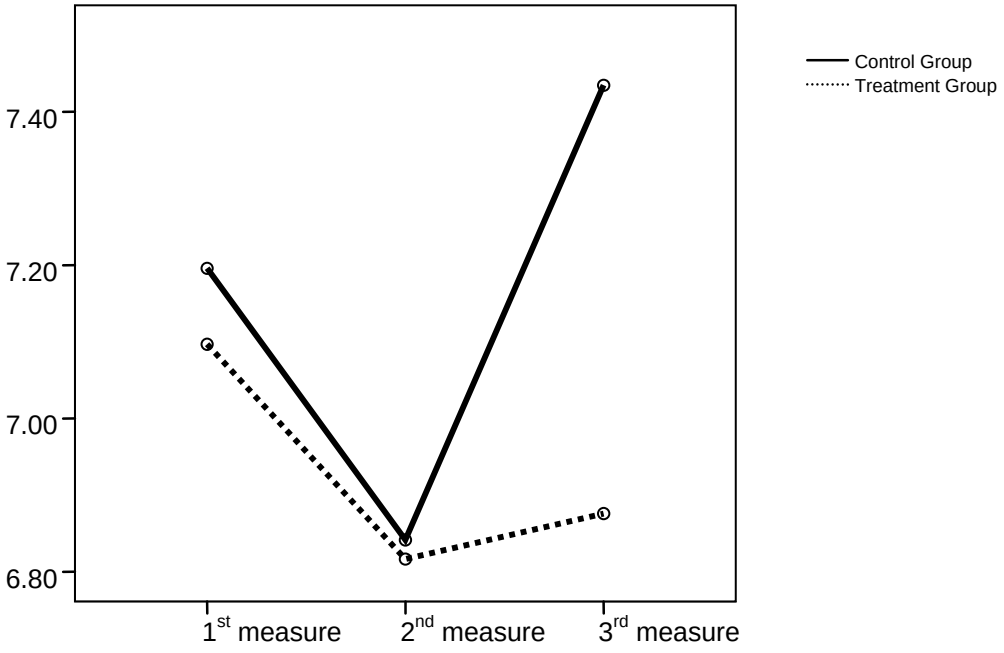

Figure 4-13. Mean plots of teaching efficacy for control and treatment groups with covariate adjustment.

Further data analysis revealed through within subject contrasts significance on treatment group and teaching efficacy from the second to the third measurement (see Table 4-26). Further significance was not found in teaching efficacy in the presence of any of the contextual variables of study. As with the model without covariates (hypothesis two), a significant interaction was found between teaching efficacy and treatment group from the second to the third measure of teaching efficacy ($F = 6.45$, $p = .01$).

Table 4-26

Within Subject Contrasts for Teaching Efficacy with Covariates

Source		*df*	SS	MS	*F*	*p*	η^2	Power
Within Group Contrasts								
Teaching Efficacy (TE)	Level 1 vs. 2	1	.05	.05	.07	.79	.00	.06
	Level 2 vs. 3	1	.28	.28	.47	.50	.01	.10
TE x Gender	Level 1 vs. 2	1	.05	.05	.07	.80	.00	.06
	Level 2 vs. 3	1	.59	.59	.97	.33	.01	.16
TE x Age	Level 1 vs. 2	1	.02	.02	.03	.86	.00	.05
	Level 2 vs. 3	1	1.22	1.22	2.02	.16	.03	.29
TE x Placement	Level 1 vs. 2	1	.23	.23	.32	.57	.01	.09
	Level 2 vs. 3	1	.50	.50	.83	.37	.01	.15
TE x AgSc Semesters	Level 1 vs. 2	1	1.00	1.00	1.41	.24	.02	.22
	Level 2 vs. 3	1	1.06	1.06	1.75	.19	.03	.26
TE x Academic Standing	Level 1 vs. 2	1	.00	.00	.01	.98	.00	.05
	Level 2 vs. 3	1	.01	.01	.01	.91	.00	.05
TE x Ethnicity	Level 1 vs. 2	1	.12	.12	.16	.69	.00	.07
	Level 2 vs. 3	1	.02	.02	.03	.87	.00	.05
TE x Work Experience	Level 1 vs. 2	1	.60	.60	.85	.36	.01	.15
	Level 2 vs. 3	1	.59	.59	.97	.33	.01	.16
TE x Treatment	Level 1 vs. 2	1	.06	.06	.08	.78	.00	.06
	Level 2 vs. 3	1	3.90	3.90	6.45	.01*	.09	.71
Error	Level 1 vs. 2	67	47.42	.71				
	Level 2 vs. 3	67	40.56	.61				

Note. **p* significant < .05

Null Hypothesis Five

Null hypothesis five stated there is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

The repeated measures analysis was also used to test for differences in perceived level of importance of the relationship with cooperating teachers as seen by student teachers (see Table 4-27). This test produced a significance level of $p = .01$ (*Mauchly's* $W = .67$). In this case, the sphericity assumption was not met; therefore, the Greenhouse-Geisser adjustment was used. The significance level of $p = .17$ ($F = 1.84$) suggests that there were no significant differences in the student teachers perceptions of their cooperating teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points (see Figure 4-14). The overall model was not significant (Between Groups, $p = .49$). However, significance was found in the interaction between relationship level perceived by the student teachers and age ($p = .01$). This interaction shows high power (.82) with a small effect size ($\eta^2 = .09$). It should be noted that as age level of the sample increased, student teachers' perceptions of their cooperating teachers level of relationship exhibited was significantly increased. Overall, the model was not found significant and the null hypothesis was held tenable and failed to reject.

Table 4-27

Student Teacher Perceptions of Their Level of Relationship with Cooperating Teacher

Source	*df*	SS	MS	*F*	*p*	η²	Power
Within Groups							
Relationship Level (RL) [1]	1.50	1.01	.67	1.45	.24	.02	.26**
Interactions							
RL x Gender[1]	1.50	.61	.41	.88	.42	.01	.18**
RL x Age[1]	1.50	4.46	2.97	6.40	.01*	.09	.82**
RL x Placement[1]	1.50	1.79	1.19	2.56	.10	.04	.43**
RL x AgSc Semesters[1]	1.50	.37	.25	.53	.54	.01	.13**
RL x Academic Standing[1]	1.50	1.28	.85	1.83	.17	.03	.32**
RL x Ethnicity[1]	1.50	.40	.27	.58	.52	.01	.13**
RL x Ag Work Experience[1]	1.50	.52	.35	.74	.44	.01	.16**
RL x Treatment Group[1]	1.50	1.28	.86	1.84	.17	.03	.33**
Error	99.05	46.03	.47				
Total	113.00						
Between Groups							
Treatment	1	.89	.89	.48	.49	.01	.10**
Error	66	122.65	1.86				

Note. Sphericity assumption not met (*Mauchly's W* = .667, *p* = .0001) [1]Greenhouse-Geisser Adjustment Used), **p* significant < .05, ** power computed using alpha = .05.

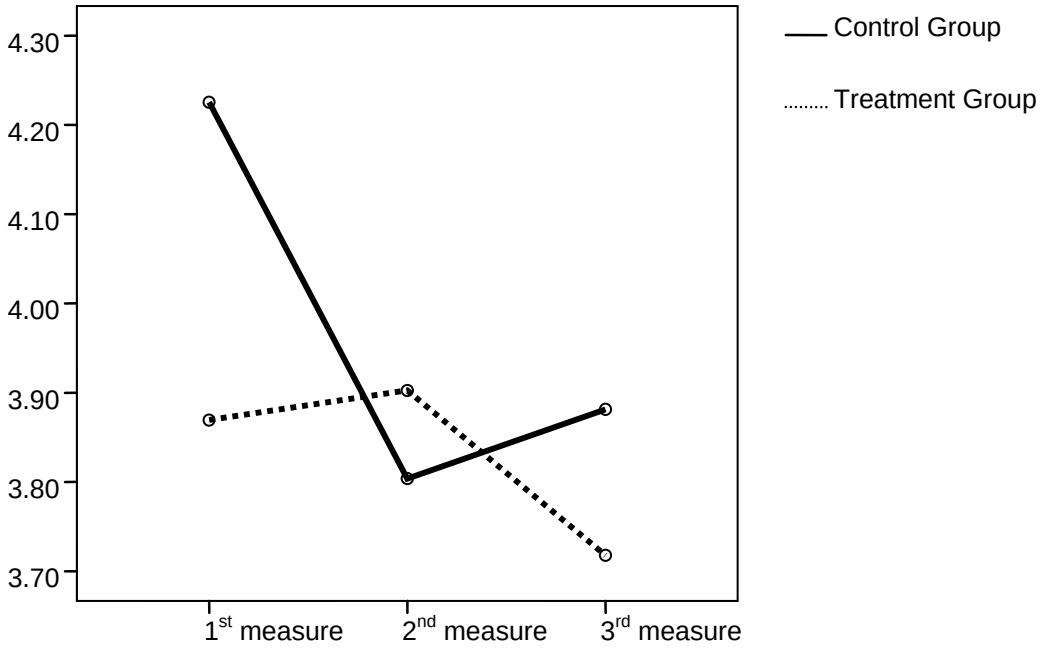

Figure 4-14. Mean plots of relationship level perception of student teacher for control and treatment groups with covariate adjustment.

Within subject contrasts did reveal three significant interactions. From the second to the third relationship measurement, age interacted significantly ($F = 21.01$, $p = .00$). Also from the second to the third measurement of relationship, academic standing interacted significantly ($F = 8.20$, $p = .01$).

Table 4-28

Within Subject Contrasts for Relationship Level with Covariates

Source		*df*	SS	MS	*F*	*p*	η^2	Power
Within Group Contrasts								
Relationship Level(RL)	Level 1 vs. 2	1	.89	.89	.99	.32	.02	.17
	Level 2 vs. 3	1	.20	.20	.68	.41	.01	.13
RL x Gender	Level 1 vs. 2	1	.19	.19	.21	.67	.00	.07
	Level 2 vs. 3	1	.44	.44	1.48	.22	.02	.22
RL x Age	Level 1 vs. 2	1	.03	.03	.04	.85	.00	.05
	Level 2 vs. 3	1	6.20	6.20	21.01	.00*	.24	1.00
RL x Placement	Level 1 vs. 2	1	2.21	2.21	2.47	.12	.04	.34
	Level 2 vs. 3	1	.07	.07	.24	.63	.00	.08
RL x AgSc Semesters	Level 1 vs. 2	1	.22	.22	.25	.62	.00	.08
	Level 2 vs. 3	1	.15	.15	.52	.48	.01	.11
RL x Academic	Level 1 vs. 2	1	1.20	1.20	1.34	.25	.02	.21
	Level 2 vs. 3	1	2.42	2.42	8.20	.01*	.11	.81
RL x Ethnicity	Level 1 vs. 2	1	.75	.75	.83	.36	.01	.15
	Level 2 vs. 3	1	.42	.42	1.41	.24	.02	.22
RL x Ag Work Exp.	Level 1 vs. 2	1	.01	.01	.01	.94	.00	.05
	Level 2 vs. 3	1	.84	.84	2.85	.10	.04	.38
RL x Treatment	Level 1 vs. 2	1	2.46	2.46	2.74	.10	.04	.37
	Level 2 vs. 3	1	1.15	1.15	3.88	.05	.06	.49
Error	Level 1 vs. 2	66	59.09	.90				
	Level 2 vs. 3	66	19.48	.30				

Note. **p* significant < .05

Chapter Summary

This chapter presented the findings obtained by this study. Results presented address hypotheses of this study which examined the effects of implementing a communication tool on efficacy, and the relationship between the student teacher and cooperating teacher, during the student teaching experience. Results are also presented which addressed hypotheses that explore the relationship between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Overall, the majority of the respondents in this study were female (61.7%) and the mean age was 23. Of those respondents, a majority (51.9%) were placed at multiple teacher cooperating centers. The majority (45%) of respondents indicated they had taken 7-8 semesters of agricultural science while in secondary schools. The majority (74.1%) of respondents indicated that they were undergraduates. Racial make-up indicated a majority (96.3%) of respondents indicated that they were white. The largest percentage (38.3%) of respondents indicated that prior agriculture work experience was avocational.

Overall teaching efficacy mean scores in the control group (n=62) for the three measurement points were 7.20 (SD = .86), 6.84 (SD = .92), and 7.38 (SD = .87), respectively. Mean scores for the treatment group at the three measurement points were 7.05 (SD = .75), 6.74 (SD = .83), and 6.84 (SD = .72), respectively. Perceptions of relationship level with cooperating teacher mean scores were 4.23(SD = .63), 3.82 (SD = 1.04), and 3.89 (SD = 1.04), respectively for the control group and 3.88 (SD = .79), 3.91 (SD = .83), and 3.77 (SD = .94), respectively for the treatment group.

Correlational data described low positive relationships found in the control group were found in the relationship level exhibited by the cooperating teacher as described by the student teacher and the student teacher's efficacy level as measured by the Teachers Sense of Efficacy scale including all teaching efficacy measurement (engagement, instructional strategies, and classroom management) constructs (r = .27). Semesters of secondary agricultural science taken during secondary education was also moderately positively correlated with agricultural work experience showing a moderate correlation (r = .34). A moderate positive correlation significant relationship was found in the treatment group in the relationship level and age (r = .48).

Null hypothesis one data analysis showed the effects of the independent variables (teaching efficacy and relationship) upon the dependent variables (implementation of a communication tool) was .08 with an F = 2.88 (p = .06). The null hypothesis was held tenable and not rejected. Null hypothesis two data analysis showed an overall model significance level of p = .11. However, the null hypothesis was held tenable and was not rejected because the overall model was not significant (F = 2.63, p = .11). Null hypothesis three data analysis resulted in a significance level of p = .16 (F = 1.88) which suggests that there were no differences in the student teachers perceptions of their cooperating teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points. The null hypothesis was held tenable and not rejected. Null hypothesis four data analysis showed an overall model significance level of p = .25 (F = 1.36) which suggested there were no significant differences overall. The null hypothesis was held tenable and failed to reject. Null

hypothesis five showed a significance level of $p = .16$ ($F = 1.84$) suggests that there were no differences in the student teachers perceptions of their cooperating teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points. Significance was found in relationship level perceived by the student teachers and age ($p = .01$). The null hypothesis was held tenable and failed to reject.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to examine the effects of structured communication on teaching efficacy, and the relationship between the student teacher and cooperating teacher, during the student teaching experience. A secondary purpose was to explore relationship between selected variables including gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Hypotheses

Based upon consulted literature, the following null and alternative hypotheses were developed to guide this study.

Null Hypotheses

Ho_1: There is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ho_2: There is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool.

Ho_3: There is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ho_4: There is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience,

or placement at cooperating center.

Ho_5: There is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Alternative Hypotheses

Ha_1: There will be a difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool.

Ha_2: There will be a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool.

Ha_3: There will be a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool.

Ha_4: There will be a difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center.

Ha_5: There will be a difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating

center.

Data were collected during the semesters of fall 2004 (*n*= 35), fall 2005 (*n*= 27), and fall 2006 (*n*= 20). Selected semesters represent the field experience enrollment (AGSC 436) of teacher education candidates enrolled in the agricultural leadership, education, and communications department at Texas A&M University. Teaching efficacy data were collected at three points during the semester student teachers were enrolled during this time period. Background and demographics data were collected when self-efficacy measurements were employed to the treatment and control groups of study.

The population of study was past, present, and future student teachers enrolled or who will enroll in field experience (AGSC 436) at Texas A&M University. This purposive sample was chosen to represent student teachers engaged in field experiences. This sample included three semesters of student teachers during the student teaching phase of their teacher education program. The control groups consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semesters of 2004 (*n*= 35) and 2005 (*n*= 27). The treatment group consisted of student teachers enrolled in field experience (AGSC 436) at Texas A&M University during the fall semester of 2006 (*n*= 20).

The first measurement of teaching efficacy (O_1) was taken at the end of the 1st four weeks of the semester in which the participant would be involved in field experiences (student teaching). The second measurement of teaching efficacy (O_2) was taken during the fifth week of the 11-week field experience at the mid-semester

conference between student teachers and teacher education faculty (university supervisors) of Texas A&M University. The third (O_3) and final teaching efficacy measurement was taken at the end of the 11-week field experience. The intervention or experimental variable (X_1) was introduced during the full field experience of the fall 2006 teacher education student teaching semester incorporated weekly.

Data were analyzed using SPSS® 15.0 for Windows™ statistical package. Demographics and background characteristics were described using descriptive statistics – means, frequencies, standard deviations, skewness, and kurtosis. Correlation statistics were used to examine relationships between teaching efficacy, perceptions of relationships held by student teacher, and contextual variables under study in this research. In order to ascertain the influence of independent variable (communication tool) upon the dependent variables (teaching efficacy and student perceptions of level of relationships), data collected on contextual variables (gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center) were used as covariates during data analysis. Multivariate analysis of variance was run and then repeated measures and repeated analysis of covariance were utilized to further delineate the findings of this study.

Data were analyzed for normalcy. An outlier was identified when descriptive statistics were employed. Further investigation of the data, revealed through box plot analyses identified the specific case contained in the treatment group (n=20). This case was identified and removed from further data analysis in this study (N=81, treatment group (n=19). Judd and McClelland (1989) argued that outlier removal is desirable,

honest, and important.

Summary of Findings

Null Hypothesis One

The null hypothesis was there is no difference in teaching efficacy and student teacher's perception of their relationship with cooperating teacher of student teachers when cooperating teachers use a communication tool. The MANOVA procedure was used to test this hypothesis. Teaching efficacy and student's perception of the relationship with the cooperating teacher were the independent variables of study and the dependent variable was the use of a communication tool by cooperating teachers. Neither the Box's M test was significant ($p = .73$) nor the Levene's test was significant ($p = .64$ and $p = .23$). These results produced from the two tests (Box's M and Levene's) allowed the use of MANOVA data analysis for this hypothesis. The effects of the independent variable (implementation of a communication tool) upon the dependent variable (teaching efficacy and relationship) showed an $F = 2.88$ ($p = .06$). Effect size was calculated at .07 and power at .55. The null hypothesis was held tenable and not rejected.

Null Hypothesis Two

The null hypothesis was there is no difference in teaching efficacy of student teachers when cooperating teachers use a communication tool. Repeated measures mixed design analysis was used to determine if a difference existed in teaching efficacy between groups across time. Analysis of within subjects provided a significance level of $p = .048$ ($F = 3.11$) for teaching efficacy. Sphericity assumption was met (*Mauchly's W*

= .98, p = .56). The significance level of p = .048 suggests there was a difference in teaching efficacy throughout the three data collection points. However, the overall model (between people) showed a significance level of p= .11 (F=2.63). The null hypothesis was held tenable and failed to reject.

Null Hypothesis Three

The null hypothesis was there is no difference in student teachers' perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool. Repeated measures analysis was also used to test for differences in perceived level of importance of the relationship with cooperating teachers as seen by student teachers. Sphericity assumption was not met, p = .01 (*Mauchly's W* = .78) therefore the Greenhouse-Geisser adjustment was used in data analysis. For within subjects Greenhouse-Geisser adjustment showed a significance level of p = .16 (F = 1.88) which suggests there were no differences in the student teachers perceptions of their cooperating teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points. The overall model (between people) showed a significance level of p= .59 (F = .29). The null hypothesis was held tenable and not rejected.

Null Hypothesis Four

The null hypothesis was there is no difference in teaching efficacy of student teacher when cooperating teachers use a communication tool in the presence gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center. To determine if a difference existed in

teaching efficacy in the presence of contextual variables, repeated measures analysis of covariance was used to test this hypothesis. Sphericity assumption was met (*Mauchly's W* = .97, *p* = .40). Analysis results for teaching efficacy using sphericity assumed with covariates of gender, age, ethnicity, agriculture science experience, agriculture work experience, and placement at cooperating center provided a significance level of *p* = .04 (*F* = 3.29). In the within subjects model the significance level suggests there were differences in teaching efficacy in the presence of covariates throughout the three data collection points as shown in null hypothesis two. The overall model (between people) showed a significance level of *p*= .25 (*F* = 1.36).The null hypothesis was held tenable and not rejected.

Null Hypothesis Five

The null hypothesis was there is no difference in student teacher's perception of their relationship with their cooperating teacher when cooperating teachers use a communication tool in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center. Repeated measures analysis was also used to test for differences in perceived level of importance of the relationship with cooperating teachers as seen by student teachers. This test produced a significance level of *p* = .01 (*Mauchly's W* = .67). Sphericity assumption was not met (*p*<.05) therefore, the Greenhouse-Geisser adjustment was used in data analysis for this hypothesis. Within subjects analysis had a significance level of *p* = .17 (*F* = 1.84) (relationship level x treatment) suggests that there were no differences in the student teachers perceptions of their cooperating

teachers current level of relationship exhibited throughout the student teaching semester during the three data collection points in the presence of contextual variables. The overall model (between people) showed a significance level of $p = .49$ ($F = .48$). The null hypothesis was held tenable and failed to reject. However, a significant effect for age was found during data analysis.

Conclusions

Because intact groups (student teachers enrolled in field experiences at Texas A&M University) were used and the sample used in this study was not randomly drawn, the following conclusions were drawn based on the limitations and findings of this study.

1. When a communication tool is used in the student teaching experience by cooperating teachers there tends to be no significant difference in teaching efficacy and student teachers' perception of their relationship with the cooperating teacher.
2. When a communication tool is used in the student teaching experience by cooperating teachers there tends to be no overall significant difference in student teachers' teaching efficacy. However, at the end of the experience, student teachers in the treatment group were less efficacious than those in the control group.
3. When a communication tool is used in the student teaching experience by cooperating teachers, there tends to be no significant difference in student teachers' perception of their relationship with their cooperating teacher.

4. When a communication tool is used in the student teaching experience by cooperating teachers, there tends to be no significant difference in teaching efficacy of student teacher in the presence gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center. However, at the end of the experience, student teachers in the treatment group were less efficacious than those in the control group.
5. When a communication tool is used in the student teaching experience by cooperating teachers, there tends to be no significant difference in student teachers perception of their relationship with their cooperating teacher in the presence of gender, age, ethnicity, agriculture science experience, academic standing, agriculture work experience, or placement at cooperating center. There is a relationship between age and perception of relationship level of student teachers.

Discussion and Implications

Null Hypothesis One

Martin and Yoder (1985) declared the field experience success of a student teacher hinged "on the general supervisory climate in the department and on the educational leadership abilities of the cooperating teacher" (p. 21). The purpose of this study was to ascertain the impact of implementing a communication tool in the student teaching field experience. It was surmised that this implementation would impact the teaching efficacy and perception of their relationship with the cooperating teacher of the

student teacher. The intervention of invoking communication between the student teacher and their cooperating teacher's main purpose was to facilitate communication in order to alleviate barriers between the two entities. Dewey (1981) stated "meanings do not come into being without language, and language implies two selves (e.g., teacher and student) involved in a conjoint or shared understanding" (p.226). As stated by DeMoulin (1993), the cooperating teacher should support and encourage student teachers.

Although the study did not reveal significant impacts upon teaching efficacy and perceptions of the relationship between student teachers and cooperating teachers through MANOVA data analysis, it should be noted that change between measurements of each dependent variable was evident in descriptive analysis. Whereas measurements for the control group from first to second measurements declined, measurements from second to the third measurement increased in total mean score. This trend for teaching efficacy is congruent with previous research (Knobloch, 2002; Roberts, et al., 2006). Respectively, the treatment group's mean score increased from the first to second mean score and declined from second to the third measurement. Although these measurements showed no significant differences, the analyses should be noted in reference to teaching efficacy and perception of relationship when implementing structured communication.

Null Hypothesis Two

Social learning theory classified teaching efficacy as a type of self-efficacy (Bandura, 1977). Teaching efficacy has been defined as "the extent to which the teacher believes he or she has the capacity to affect student performance" (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137). Tschannen-Moran, Woolfolk Hoy, & Hoy (1998)

further defined teaching efficacy as "the teacher's belief in his or her capability to organize and execute action required to successfully accomplish a specific teaching task in particular context" (p. 22).

Bandura (1986, 1997) stated there are four sources of self-efficacy: mastery experiences; vicarious experiences; social influences; and physiological and emotional arousal. It has been stated that through mastery experiences during student teaching can a powerful source of efficacy. Tschannen-Moran et al. (1998) stated "self-perception of teaching competence is affected by all four sources identified by Bandura, but it is mostly directly influenced by mastery experiences and the physiological arousal associated with those experiences" (p. 19). Teaching experiences allows individuals to assess personal capabilities and experience the consequences of their actions during the teaching process. It is surmised that through viable and proficient observations of successful teaching, beginning teachers can believe that they possess the ability in order to be successful in similar circumstances (Bandura, 1977, 1986; Schunk, 2004; Tschannen-Moran et al., 1998). Bandura (1986) stated social persuasion depends largely upon credibility, expertise, and trustworthiness of the persuader.

Self-perceptions can be lowered if feedback is overly harsh rather than constructive and focused on specific performance criteria. Social persuasion is a direct experience through the cooperating teacher and student teacher relationship in regards to the communication evoked through performance appraisals. Through analysis of data for this study it was seen that there was no significant difference in overall teaching efficacy through the implementation of structured communication by the cooperating teacher.

Both the treatment group and control group dropped in teaching efficacy from the first to the second measure but scores increased towards the third measurement. However, a difference was found in the comparison from the control group to the treatment group at the conclusion of the experience. This difference raises many conclusions and implications from this study. Because teaching efficacy is a form of self-efficacy, it is dependent of the perception of the individual of their perceived abilities. The difference shown in the data describes a lowered perception by the treatment group in which communication was invoked through the cooperating teacher. It is surmised by the researcher that one reason for this was that through structured communication, individuals more discriminately judged their abilities as opposed to those who did not consistently communicate with a cooperating teacher about many aspects of the field experience.

Another plausible outcome for the difference in teaching efficacy could be surmised that through communication and feedback, student teachers felt that their abilities were criticized which would lead to a lowered sense of teaching efficacy. Putnam and Borko (2000) stated it has been a struggle for teacher educators to understand how much knowledge and the kinds of environments which creates meaningful experiences. It was shown through mean plots that the control group from the first measurement to the last measurement showed an increase in efficacy. The treatment group showed a decrease over that same measurement period. It is presumed that the intervention of structured communication may cause student teachers to be more grounded in their perception of their beliefs about teaching due to the implementation of

structured communication during field experiences. Although communication should be an integral part of the cooperating teacher and student teaching experience, its impact should constantly be monitored and be made aware of to teacher educators and cooperating teachers of student teachers.

Null Hypothesis Three

No significant difference was found in relation to student teacher's perception of their relationship with their cooperating teacher when a communication tool is used by cooperating teachers. It should be noted that although not significant there was a difference in data reported by both groups. Data showed a decrease in mean scores by the control group from first measurement to the second measurement. There was then seen an increase from the second measurement to the third. The treatment group showed an increase from the first measurement to the second measurement in mean score whereby the control group's mean scores indicated a decrease in the perceptions of the student teacher on level of relationship exhibited by the cooperating teacher. Data for the treatment group showed a decrease from second measurement to the third measurement as the control group data also indicated an increase in mean score. Because of data exhibited in this study, although not significant the downward trend of both groups in relation to relationship between student teacher and cooperating should be further investigated.

Kasperbauer and Roberts (2007b) concluded that student teachers' perceptions of cooperating teachers' relationship level exhibited decreased throughout the student teaching experience. This study concurs with Kasperbauer et al., (2007b) through results

exhibiting a downward trend in perceptions of relationships by student teachers of cooperating teachers. Fritz and Miller (2003) stated student teachers should "reflect on their daily concerns and receive feedback … communicate with other student teachers and supervisors" (p. 51). Communication is important in relationships and if the perception of the relationship erodes over time the impact of the sharing of knowledge and experience through it will lessen in meaning for student teachers.

Null Hypothesis Four

The presence of a communication tool seems to have no significant impact upon teaching efficacy. Although not seen as an increase in mean score for the student teacher, the presence of contextual variables were not seen as a significant determinant through this analysis. As discussed in null hypothesis two, from the second to the third measurement, it seems to not have an impact on efficacy level. This may be explained by the student teachers reflecting on their abilities and with more feedback from the cooperating teacher they may be more firmly grounded in their abilities but rate their abilities less due to a more involved communication than groups measured without a comprehensive communication tool. Although scores in the treatment group are lower than the control group, it may be due in part to more awareness in their abilities or limitations and not because there are in reality less efficacious because of structured communication. While in reality, student teachers may have gained more skill level due to their communication with the cooperating teacher and more expertly rate their efficaciousness lower. Because this study looked into efficacy and not skill level rating we can only conclude that student teachers were more aware of the needs of being an

agriculture science teacher and the perception of those abilities and thus it can not be a determination of skill level.

In another study, Knobloch (2002) studied the effects caused by the first ten weeks of the school year on teacher efficacy of student teachers and novice teachers in agricultural education. Knobloch found that at the end of ten weeks of teaching experience first-year teachers had the lowest efficacy and preservice teachers held the highest level of teacher efficacy. Although the treatment group of study in this study was in opposition to that and other studies conducted on teaching efficacy based upon his deduction that different teaching experiences influenced student teacher development and efficacy level may have precedence here as well. This difference in experience can not be correlated to the student teachers experience because they have no previous student teaching experience but cooperating teachers in this study were asked to use a communication tool they had little experience in using. This may have tended to raise the expectations of the cooperating teachers upon the levels of communication needed towards student teacher which resulted in more in-depth criticism of student teachers during the field experience.

Roberts, et al., (2006) conducted a longitudinal examination of teaching efficacy of agricultural education student teachers. It concurred with Knobloch (2002) on teaching efficacy measurement throughout the field experience with a trend of increasing from first measurement to the last measurement. This researcher believes that communication can make a positive impact on teaching efficacy held by student teachers if only by grounding their beliefs in authentic assessment of teaching performance.

Cooperating teachers should be educated on proper methods of feedback towards student teachers in the field experience.

Null Hypothesis Five

No significant difference was found in relation to student teacher's perception of their relationship with their cooperating teacher when a communication tool is used by cooperating teachers in the presence of contextual variables. As reported in null hypothesis three there was a difference in data reported by both groups. Data showed small differences in the level and direction of mean scores in regards to previous teaching efficacy research but no significance was found. The relationship between the cooperating teacher and the student teacher is paramount to the growth and experience of student teachers. The perception of relationship held by student teachers will be an impacting variable as student teachers reflect upon experience and skill acquisition during this stage of their professional career.

Significance was found in relationship level perceived by the student teachers and age during data analysis. This interaction of age and relationship level shows that as age of student teacher increases, the perception of the level of relationship of the cooperating teacher increases. This is a significant finding because although the mean age for this study was 23 (range of 21 to 47), older student teachers may perceive relationships between themselves and cooperating teachers more importantly than do younger student teachers.

Although there is negligible research available regarding the importance of relationships in student teaching experience, their impacts can be paramount upon the

perception of the whole experience of student teaching. Edwards and Briers (2001) conducted a focus group with and a quantitative follow up study of cooperating teachers who attended a workshop. This research identified items and the student teacher and cooperating teacher relationship were among five of the ten highest rated items through quantitative analysis. Further research should be undertaken regarding relationships during field experiences in agriculture education.

Recommendations for Further Research

The foundation for this research was based on the social constructivism theory that defines the nature of knowledge as a social process that is a shared experience rather than an individual process. The student teacher experience is an event in the professional education of teachers that is social and to a great extent a shared experience under the guidance of a cooperating teacher and a university supervisor. Through this social interaction, knowledge is gained through experience which is entrenched in cultural, social, and language-based interactions. Pajares (2001) stated we should understand individual's external environment in order to understand the development of individuals in isolated contexts. To this degree, Bandura (1986) previously declared that a reciprocal relationship exists between behavior, external environment, and personal factors that interact to form a triadic reciprocal system. This study sought to understand the role that communication played in the teaching efficacy beliefs of student teachers in a field experience.

Student teaching has been proven to be an important aspect to teacher development (Borne & Moss, 1990; Deeds, Flowers, & Arrington, 1991; Edwards &

Briers, 2001; Harlin, et al., 2002; Norris, et al., 1990). In addition, cooperating teachers are important to student teaching (Norris, et al., 1990). Dunkin and Biddle's (1974) model was used to explain the relationship of the cooperating teacher and student teacher and the resulting efficacy effects described as product variables in this study.

Because of the shortage of qualified teachers in agriculture education filling available positions (Camp, et al., 2002; Connors, 1998), further research into the needs of student teachers during field experiences is warranted. In addition, further research is needed in order to ascertain why many new graduates of agriculture education do not fill available positions (Camp et al., 2002). As reported by Myers and Dyer (2004), being involved in early experiences contributes towards preservice teachers' decision to enter the field of agricultural education. Also student teaching has repeatedly been identified as an important element of the teacher education program (Borne & Moss, 1990; Deeds, et al., 1991; Edwards & Briers, 2001; Harlin, et al., 2002; Norris, et al., 1990). Furthermore, early field and the student teaching (field) experiences positively impact preservice teachers of agricultural education programs (Myers & Dyer, 2004).

In order to better understand the relationship and the efficacy levels held by student teachers about the variables of study more research should be done in these areas. Further research in other institutions of higher education with teacher education in agriculture education should be completed. Replication of this study is recommended to further understand these important variables in more diverse contexts.

Reflections

Upon completion of this study, the researcher reflected on the processes involved

in this study. It is firmly believed by the researcher that communication between the cooperating teacher and student teacher is a vital link that needs to be addressed to understand beliefs held by student teachers. More understanding will provide valuable insight to this paradigm in agriculture education. Lave and Wenger (1991) stated the premise of situated learning is learning occurs at all times and in all activities of that individual. Because of the social nature of situated learning, learning and beliefs are influenced greatly through their activities and outcomes associated with these activities.

The researcher recommends that an orientation session for cooperating teachers using communication tools be conducted to address the implementation of a communication tool. This orientation would allow university faculty to explain the instrumentation, protocols, and outcomes sought through further communication between the cooperating teacher and student teacher. Through training of proper communication and supervisory roles of the cooperating teacher, a more educative experience for the student teacher should develop.

The researcher also recommends educating student teachers about the value of communication during field experiences. The value of this advice would provide student teachers with better guidance and knowledge from cooperating teachers. The researcher believes that although communication occurs during this field experience, more education on the advantages of proper communication and its needs will allow student teachers to gain more skills, knowledge, and efficacy. Dewey (1980) stated:

> Not only is social life identical with communication, but all communication … is educative. To be a recipient of a communication is to have an enlarged and

changed experience. One shares in what another has thought and felt … has his own attitude modified. Nor is the one who communicates left unaffected. (p. 8-9)

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APPENDIX A

COVER LETTER STUDENT TEACHERS

(Title) (First name)(Initial)(Last Name)
(School name)
(Address)
(City)(State)(Zip)

I am writing to ask for your help in a study that will evaluate the effects of the use of an evaluation form upon preservice and cooperating teacher relationships. This study will determine the effects of using an evaluation form weekly through preservice and cooperating teachers.

You were selected because of your involvement in preservice teaching field experiences for the fall of 2006 with Texas A&M University. This study is conducted through a sample of those programs identified as being cooperating centers for preservice teachers for the fall of 2006.

Results from the evaluation form will be used to identify relationships and teaching efficacy of preservice teachers and cooperating teachers. By understanding how preservice teachers and cooperating teachers communicate through the preservice training process, future preservice teachers will benefit from the knowledge gained through this study.

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979)458-4067, araines@vprmail.tamu.edu.

If you have any questions or comments regarding the evaluation form I would be happy to talk with you. Please do not hesitate to contact me (979) 862-7650 or by email at dedgar@aged.tamu.edu. Thank you very much for helping with this important research.

Sincerely,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
Agricultural Leadership, Education & Communications
979-862-7650
dedgar@aged.tamu.edu

APPENDIX B

COVER LETTER COOPERATING TEACHERS

(Title) (First name)(Initial)(Last Name)
(School name)
(Address)
(City)(State)(Zip)

I am writing to ask for your help in a study that will evaluate the effects of the use of an evaluation form upon preservice and cooperating teacher relationships. This study will determine the effects of using an evaluation form weekly through preservice and cooperating teachers.

Please sign and return the "Implementing Evaluation Reports and its Effects Upon Preservice/Cooperating Teacher Relationships" document in the self-addressed, stamped envelope. Also enclosed are the directions for completing the communication tool online.

You were selected because of your involvement in preservice teaching field experiences for the fall of 2006 with Texas A&M University. This study is conducted through a sample of those programs identified as being cooperating centers for preservice teachers for the fall of 2006.

Results from the evaluation form will be used to identify relationships and teaching efficacy of preservice teachers and cooperating teachers. By understanding how preservice teachers and cooperating teachers communicate through the preservice training process, future preservice teachers will benefit from the knowledge gained through this study.

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979)458-4067, araines@vprmail.tamu.edu.

If you have any questions or comments regarding the evaluation form I would be happy to talk with you. Please do not hesitate to contact me (979) 862-7650 or by email at dedgar@aged.tamu.edu. Thank you very much for helping with this important research.

Sincerely,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
Agricultural Leadership, Education & Communications
979-862-7650
dedgar@aged.tamu.edu

APPENDIX C

CONSENT FORM STUDENT TEACHERS

Implementing a Communication Tool to Determine Its Effects Upon Preservice/Cooperating Teacher Relationships

You have been asked to participate in a research study to evaluate the effects of communication tools reports upon preservice and cooperating teacher relationships. You were selected to be a possible participant because you are enrolled in AGSC 436 for the fall semester of 2006 at Texas A&M University. A total of 40 people have been asked to participate in this study. The purpose of this study is to determine the effects of a communication tool upon preservice and cooperating teacher relationships. This study will look to identify the effects of a communication tool towards teacher efficacy and preservice/cooperating teacher relationships.

If you agree to be in this study, you will be asked to submit weekly evaluation reports and meet with your cooperating/preservice teacher weekly. This communication tool can be completed via web based reporting or submitted through regular mail by forms provided to the preservice teacher. This study will encompass the 11 weeks of the preservice teacher training during the fall of 2006. There are no apparent risks involved with this study. The benefits of participation are to determine the need of evaluation forms and their effects upon preservice/cooperating teacher efficacy.

This study is confidential and all information gained will be coded by the researcher and other identifying information will be removed from the form. The records of this study will be kept private. No identifiers linking you to the study will be included in any sort of report that might be published. Research records will be stored securely and only Don W. Edgar will have access to the records. Your decision whether or not to participate will not affect your current or future relations with Texas A&M University. If you decide to participate, you are free to refuse to answer any of the questions that may make you uncomfortable. You can withdraw at any time without your relations with the University, job, benefits, etc., being affected. You can contact Don W. Edgar (979) 862-7650, or Tim Murphy (979) 862-3419 with any questions about this study.

This research has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Melissa McIlhaney, IRB Program Coordinator, Office of Research Compliance, (979) 458-4067, mcilhaney@tamu.edu.

Please be sure you have read the above information, asked any questions you have, and received answers to your satisfaction. You will be given a copy of this consent form for your records. By signing this document, you consent to participate in the study.

Signature of Participant: _____ Date: _____

Signature of Investigator: _____ Date: _____

APPENDIX D

CONSENT FORM COOPERATING TEACHERS

Implementing Evaluation Reports and Its Effects Upon Preservice/Cooperating Teacher Relationships

You have been asked to participate in a research study to evaluate the effects of evaluation reports upon preservice and cooperating teacher relationships. You were selected because of your involvement in preservice teaching field experiences for the fall of 2006 with Texas A&M University. This study is conducted through a sample of those programs identified as being cooperating centers for preservice teachers for the fall of 2006. A total of 40 people have been asked to participate in this study. The purpose of this study is to determine the effects of implementing evaluation reports upon preservice and cooperating teacher relationships. This study will look to identify the effects of an evaluation form towards teacher efficacy and preservice/cooperating teacher relationships.

If you agree to be in this study, you will be asked to submit weekly evaluation reports and meet with your cooperating/preservice teacher weekly. This evaluation form can be completed via web based reporting or submitted through regular mail by forms provided to the preservice teacher. This study will encompass the 11 weeks of the preservice teacher training during the fall of 2006. There are no apparent risks involved with this study. The benefits of participation are to determine the need of evaluation forms and their effects upon preservice/cooperating teacher efficacy.

This study is confidential and the researcher will code all information gained and other identifying information will be removed from the form. The records of this study will be kept private. No identifiers linking you to the study will be included in any sort of report that might be published. Research records will be stored securely and only Don W. Edgar will have access to the records. Your decision whether or not to participate will not affect your current or future relations with Texas A&M University. If you decide to participate, you are free to refuse to answer any of the questions that may make you uncomfortable. You can withdraw at any time without your relations with the University, job, benefits, etc., being affected. You can contact Don W. Edgar (979) 862-7650, or Tim Murphy (979) 862-3419 with any questions about this study.

This research has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Melissa McIlhaney, IRB Program Coordinator, Office of Research Compliance, (979) 458-4067, mcilhaney@tamu.edu.

Please be sure you have read the above information, asked any questions you have, and received answers to your satisfaction. You will be given a copy of this consent form for your records. By signing this document, you consent to participate in the study.

Signature of Participant: _____ Date: _____
Signature of Investigator: _____ Date: _____

APPENDIX E

COMMUNICATION FORM DIRECTIONS - LONG

Preservice Teacher Weekly Communication Form
Department of Agricultural Leadership, Education, and Communications

Thank you for the dedication of your time and expertise with preservice teachers. This is an invaluable experience that will shape the future of agricultural education and the youth served through local secondary schools.

Following are directions on how to complete the preservice teacher weekly communication form. These directions will also describe submission options and guides to the rating system used. If anything is unclear or you need further clarification, please do not hesitate to contact Don Edgar at 325-642-4630 or dedgar@aged.tamu.edu. If you cannot reach me, please contact Dr. Grady Roberts at 979-862-3707 or at groberts@tamu.edu

The preservice teacher weekly communication form will help serve as a valuable feedback tool between the cooperating teacher and the preservice teacher. This will allow the cooperating teacher and the preservice to meet weekly and discuss recommendations and comments given by the cooperating teacher for further growth of the preservice teacher during their 11 week experience.

It is recommended that the cooperating teacher fill out the communication form after observing the practices of the preservice teacher for the current week and meet with them to discuss their progress and/or status up until that point. This will allow the preservice teacher to reflect upon current practices and make necessary changes for further progression towards exemplary teaching.

Section I: Directions for web-based submission.

The communication form is located at: http://www.aged.tamu.edu/agsc/stb/downloads/CommTool.pdf . This form requires Adobe Acrobat reader. If you do not have this software you can download it free at http://www.adobe.com/products/acrobat/readstep2.html. This will allow you to fill out, print, and submit the form either through email or through regular mail. All rating fields and preservice/cooperating teacher information **must be filled out** before the file will be able to be submitted electronically.

Once you have clicked on the link it will bring up the form in Adobe acrobat. You can start using the drop-down lists to choose responses to the questions. You will choose the preservice teacher you are supervising from the list by moving your mouse cursor over

the down arrow and clicking. This will show the list of preservice teachers and you will choose the preservice teacher you are supervising by clicking on their name. Once you have completed this step, you can then follow the same procedure to identify yourself as the cooperating teacher and the school where you are located. Next you will go to the date field. By clicking on the drop down list, a calendar will be produced in which you can choose the date, which you are making your weekly evaluation. This can be done by moving your mouse cursor over the date and clicking that date. This will produce the required date in the date field. For further directions refer to Figure 1.

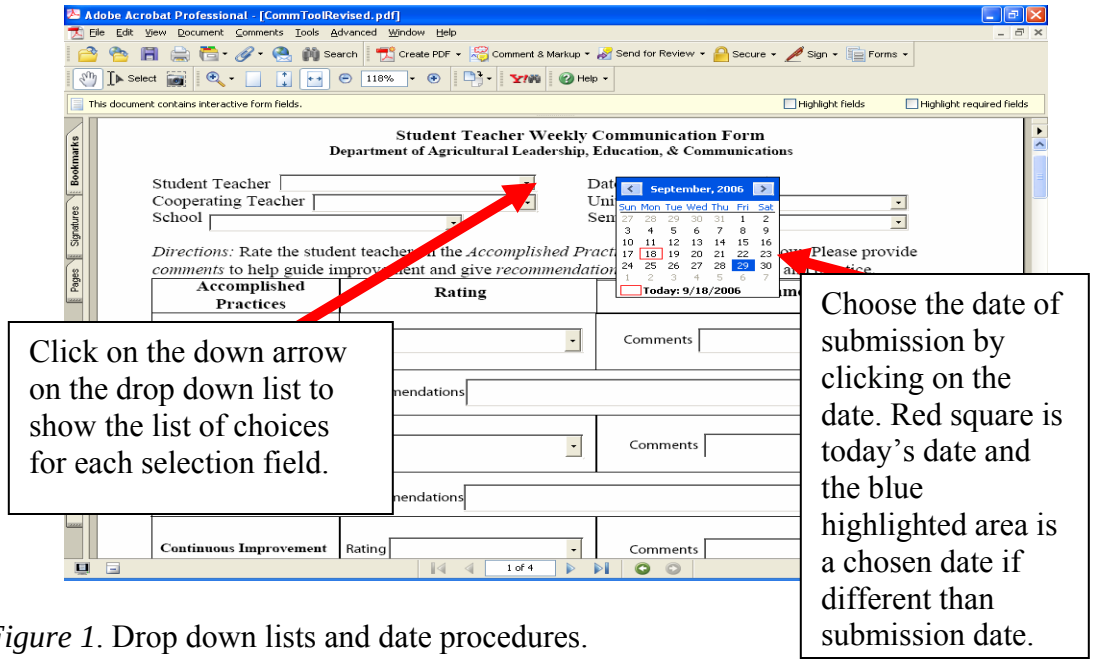


Figure 1. Drop down lists and date procedures.

After completing the date field response, you can select the university supervisor if you know that information. If you do not know that information you should choose one so that the program has no empty fields. If you do not know the answer to this question choose "Edgar" in the drop down list. The last field to complete in this section will be the semester and year. This field is should show "Fall, 2006" and there is only one choice so choose this from the list by clicking it. Once all of these fields have been chosen you can go to Section II to find information in order to complete the Accomplished Practices sections which allow you to rate the preservice teaching in 12 practices and allows for comments and recommendations. Proceed to Section II for further directions.

Section II: Completing the accomplished practices, recommendations and comments section.

The form has 12 sections for accomplished practices of the preservice teacher. The preservice teacher must be rated on each of the 12 accomplished practices. The

cooperating teacher must assign either an **O** - Outstanding; **A** - Accomplished; **P** - Progressing; **NI** - Needs Improvement; or **NA** - Not Applicable or observed.

Following are guides for the basis of rating the preservice teacher in the twelve areas on the communication tool. **O –** Outstanding: The student teacher demonstrates the skills consistently in an exemplary manner. **A –** Accomplished: The student teacher demonstrates the skills consistently in an acceptable manner. **P –** Progressing: The intern is showing adequate progression toward the demonstration of this practice. There has been shown continual improvement. **NI** – Needs Improvement: The student teacher demonstrates the skills ineffectively or a serious absence of these skills is observed. The student teacher needs guidance and improvement in this area. **NA** – Not Applicable or observed for this observation/evaluation. There is not enough data to make a judgment or no opportunity to observe these skills. All 12 accomplished tasks must be rated each week. The cooperating teacher should rate the preservice teacher based on their observation of prescribed practices.

The next field to be filled out by the cooperating teacher is the comments section. This section should be used to describe those areas that the preservice teacher should reflect upon for further growth. It can also be used to designate areas that the preservice teacher is doing well in. This field can hold and unlimited spaces for responses so please do not feel that you have to be succinct in your comments. You can move your cursor over the grayed-in box and click the mouse button and type your comments in this section. Again, it will hold pages of text if you so wish for it too.

The next field for accomplished practices in each section is recommendations. This field should focus on addressing the comments made on the accomplished practices. The cooperating teacher should place recommendations here for further growth of the preservice teacher. This will allow the preservice teacher to make necessary adjustments to practices and methods employed during the preservice teaching experience. You can move your cursor over the grayed-in box and click the mouse button and type your comments in this section. Again, it will hold pages of text if you so wish for it too.

Each accomplished practice has general areas that it should focus on. On pages three and four of the communication tool form, each accomplished practice is listed and examples of what each area should focus on are provided. These lists are not inclusive of all observable practices but should be used as a guide. The cooperating teacher can expound on this list as the preservice teacher experience encompasses more areas and they identify other practices that fall into this accomplished practice.

At the bottom of page two are two buttons. The "print form button" (bottom left side) will allow you to print the communication tool to fill the form out manually or you may print it out after you have filled out the form on your computer. The "submit by email button" (bottom right side) will allow you to submit the file once **all** fields are filled. You cannot submit the file if all fields are not filled out. The file will not start you local

email application in order to submit the file correctly. These two buttons should be used once you are through filling out the form for submission. See Figure 2 for more details.

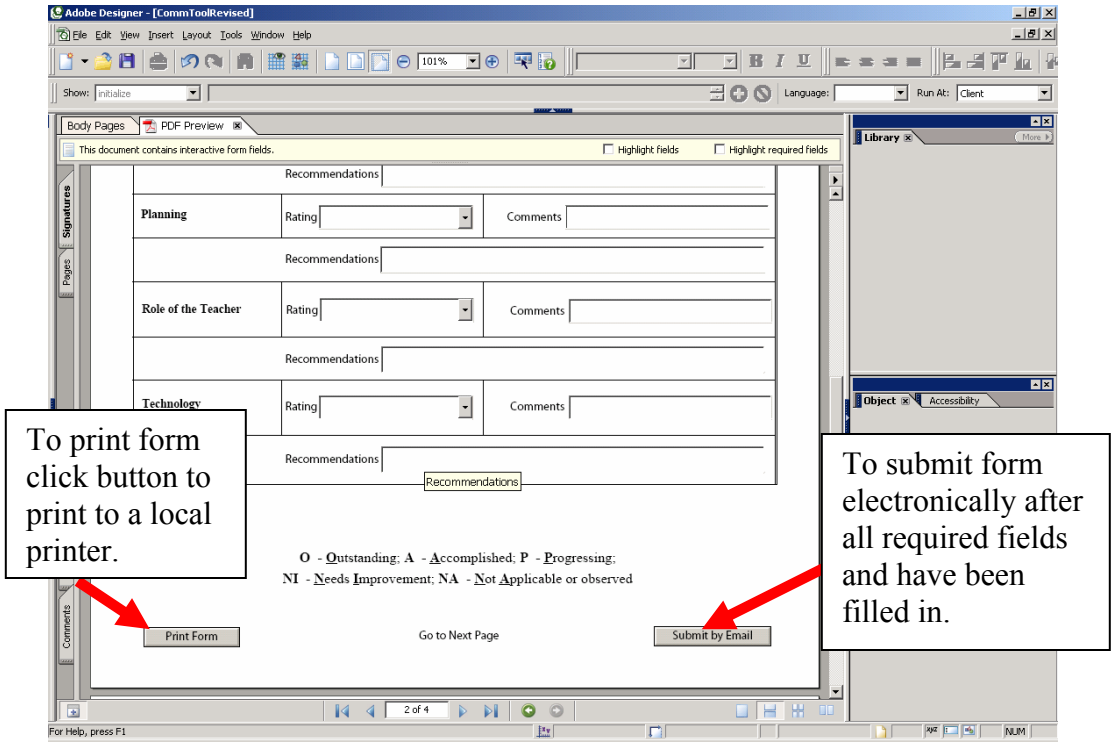


Figure 2. Bottom of page two communication form buttons

At the completion of this communication tool, it will ask that you submit the tool either through email or U. S. postal mail. For electronic submission refer to Section III for further directions. Following are directions on how to print the form.

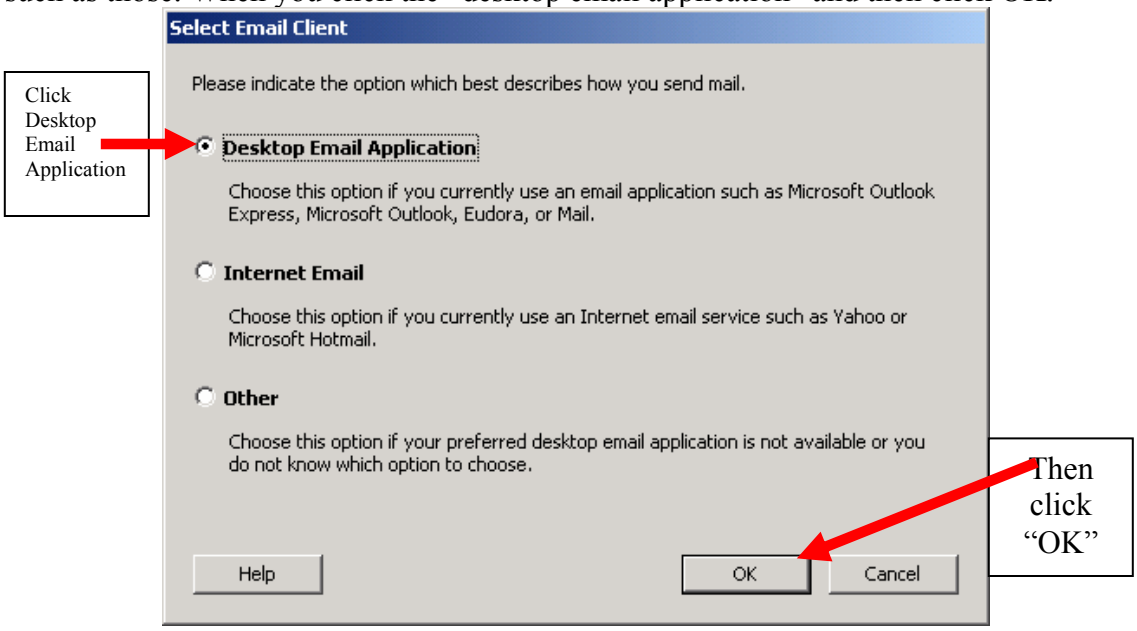
In order to print you will move your mouse cursor over the print form button and click the button. It will bring up your local printer in order to print. If it does not bring this up you may need to contact your local technical support personnel so that your computer can print to a specified location.

You may print out a copy of the form for your records. It is highly recommended that you spend an allotted time with this assessment with the preservice teacher so that your rating, comments, and recommendations can be discussed and improvements can be implemented through this discussion with the preservice teacher.

Section III: Directions for Email submissions.

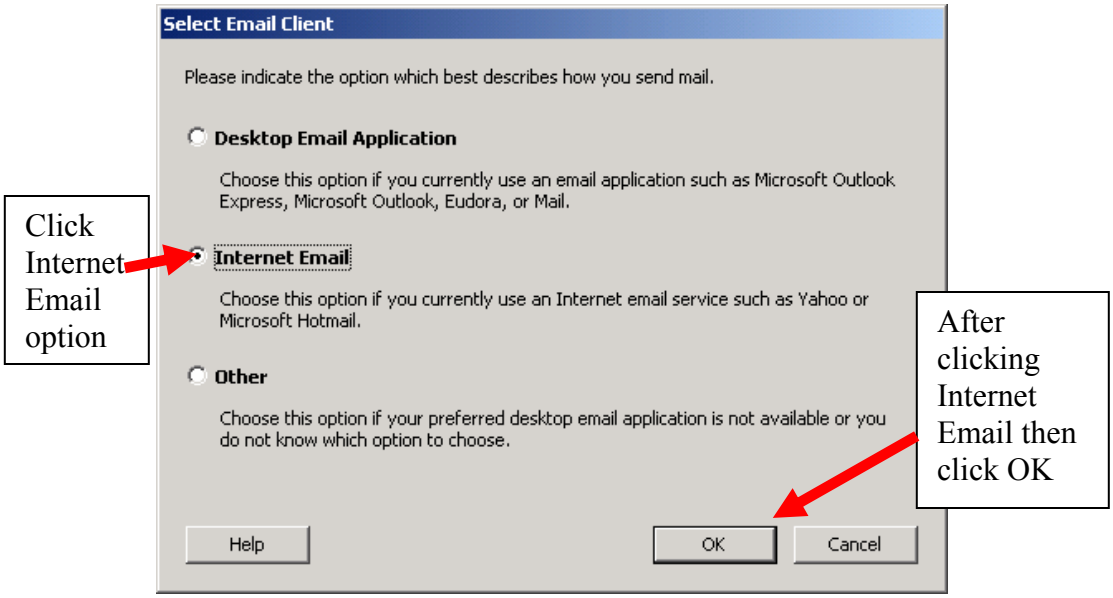
After all fields have been properly filled out, you may submit the communication tool electronically through an email account. To do this you will move your mouse over the "Submit by Email" button and click the left button of your mouse. This will bring up a "select email client window". Refer to Figure 3 for more information. You are given three choices: Desktop email application, Internet email, and other.

A. <u>Desktop email application option</u>: If you click and choose the desktop email application it will send the form electronically through your local email application if you use Microsoft Outloook, MS Outlook Express, or another kind of email application such as those. When you click the "desktop email application" and then click OK.



Next it will bring up a window that says "send data file." You will need to click "send data file". This will automatically bring up your default email application and attach the data file. If you have any comments to me, you can include them in the body of the email. Then you will click the send button and you are done!!

B. Internet Email Option: You will click the "Internet Email" option on the select email client window and then click "OK."



After clicking OK you will be directed to window as seen below. Follow the direction on the screen for email submission. You must save the data file to a location you will be able to find and attach through your email application! You will first save the data file and then you will go to your email application, create a new message, enter in dedgar@aged.tamu.edu in the address field and attach the data file and then send the message. For further explanation refer to figure 3.

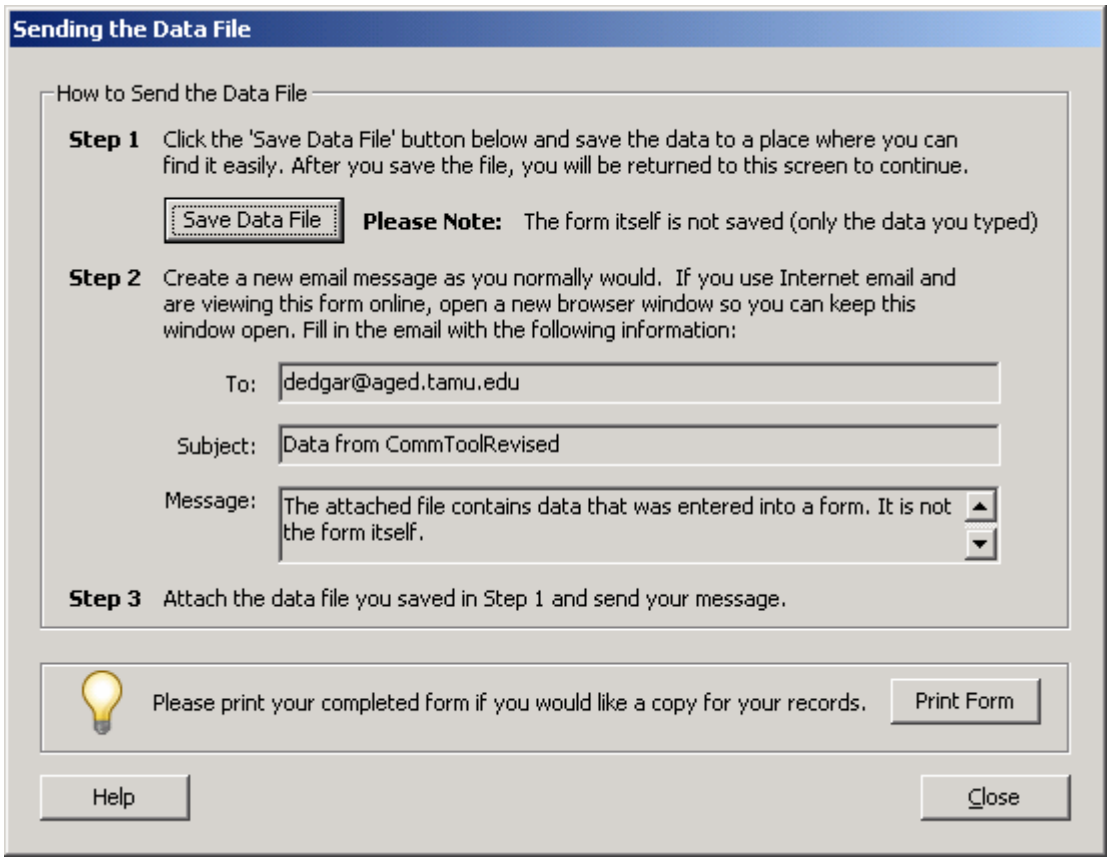
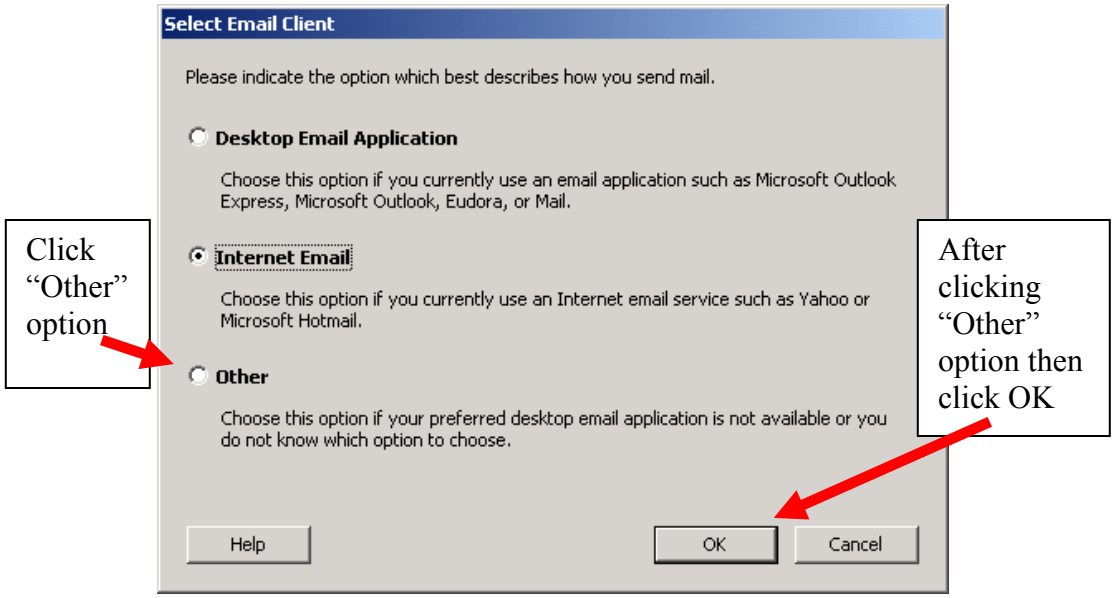


Figure 3. Sending a data file through an internet email client.

C. Other: The directions for this type of email application is the same as Internet Email option. You will click the "Internet Email" option on the select email client window and then click "OK."



After clicking OK you will be directed to window as seen below. Follow the direction on the screen for email submission. You must save the data file to a location you will be able to find and attach through your email application! You will first save the data file and then you will go to your email application, create a new message, enter in dedgar@aged.tamu.edu in the address field and attach the data file and then send the message. For further explanation refer to figure 3.

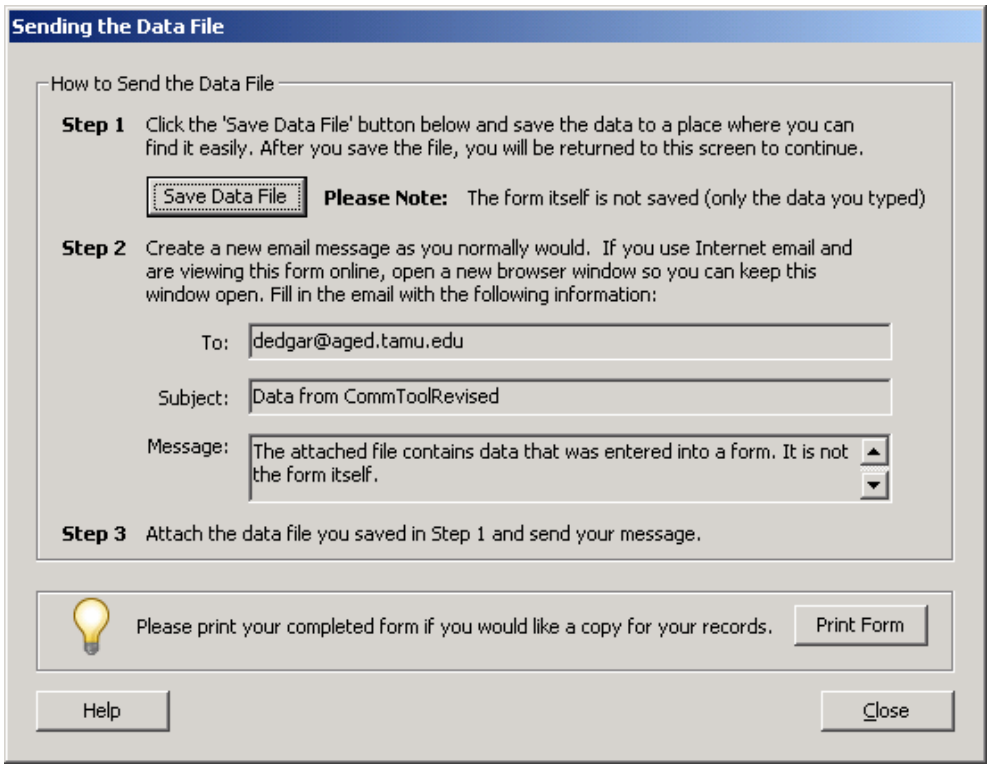


Figure 3. Sending a data file through an internet email client.

You devotion to the growth of these individuals is highly valued. If you find you have any questions and/or comments please contact Don Edgar at dedgar@aged.tamu.edu or at ph# 325-642-4630. Thank you for your time and commitment towards the professional growth of these preservice teachers.

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
Department of Leadership, Education, and Communications

APPENDIX F

COMMUNICATION FORM DIRECTIONS - SHORT

Preservice Teacher Weekly Communication Form
Department of Agricultural Leadership, Education, and Communications

Directions on how complete the weekly communication form.

Thank you for the dedication of your time and expertise with preservice teachers. This is an invaluable experience that will shape the future of agricultural science education and the youth served through local secondary schools.

Following are directions on how to complete the preservice teacher weekly communication form. These directions will also describe submission options and guides to the rating system used. If anything is unclear or you need further clarification, please do not hesitate to contact Don Edgar at 325-642-4630 or dedgar@aged.tamu.edu. If you cannot reach me please contact Dr. Grady Roberts at 979-862-3707 or at groberts@tamu.edu.

The communication form is located at: http://www.aged.tamu.edu/agsc/stb/downloads/CommTool.pdf . This form requires Adobe Acrobat reader. If you do not have this software you can download it free at http://www.adobe.com/products/acrobat/readstep2.html. This will allow you to fill out, print, and submit the form either through email or through U.S. Postal mail. All rating fields and preservice/cooperating teacher information **must be filled out** before the file will be able to be submitted electronically.

The preservice teacher weekly communication form will help serve as a valuable feedback tool between the cooperating teacher and the preservice teacher. It is recommended that the cooperating teacher fill out the communication form after observing the practices of the preservice teacher for the current week and meet with them to discuss their progress and/or status up until that point. This will allow the preservice teacher to reflect upon current practices and make necessary changes for further progression towards exemplary teaching.

There is a rating section for each accomplished practice observed of the preservice teacher. You can choose either **O - O**utstanding; **A - A**ccomplished; **P - P**rogressing; **NI - N**eeds **I**mprovement; or **NA - N**ot **A**pplicable or observed. For each accomplished practice section there are section fields for comments and recommendations. There is no limit for these two sections so please feel free to put as many suggestions and recommendations in these two areas to help the student teacher progress. Once all twelve accomplished practices and comments and recommendations for each have been filled out you can submit the form through your local email provider or and outside email client. Follow the directions provided on-screen and it will guide you through the submission process.

Thank you,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University - Department of Leadership, Education, and Communications

APPENDIX G

WEEKLY EMAIL REMINDER

Dear «Fall_2006_Student_Teachers»,

I hope your week is going well. Two weeks down and nine to go! We have not received your weekly communication form from week two. If you and/or your cooperating teacher are having trouble with the form please call or email Don Edgar at 979-862-7650 or dedgar@aged.tamu.edu <mailto:dedgar@aged.tamu.edu>. Again, if you have any questions about the forms, submissions, or other questions just send it to me and I would be happy to help in any way I can.

Thanks,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
dedgar@aged.tamu.edu

APPENDIX H

Dear (cooperating teacher),

Thank you for participating in the study that looked into the effects of using a communication tool and its effect upon teaching efficacy and student teacher and cooperating teacher relationships. Your time and involvement has been a great help in determining the nature of these relationships. I have three follow-up questions that I would appreciate your valued input in. Please mark the answer to each question by placing an "X" before your choice and send this email back to me at dedgar@aged.tamu.edu. Thank you!

1) How much time do you believe you spent with your student teacher *each week* **communicating about expectations and teaching performance in the classroom**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

2) How much time do you believe you spent with your student teacher *each week* **communicating about FFA responsibilities as an agricultural science teacher**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

3) How much time do you believe you spent with your student teacher *each week* **communicating about SAE responsibilities as an agricultural science teacher**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979)458-4067, araines@vprmail.tamu.edu.

If you have any questions or comments regarding the evaluation form I would be happy to talk with you. Please do not hesitate to contact me at (979) 862-7650 or by email at dedgar@aged.tamu.edu. Thank you very much for helping with this important research.

Sincerely,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
Agricultural Leadership, Education & Communications
979-862-7650
dedgar@aged.tamu.edu

APPENDIX I

Dear (student teacher),

Thank you for participating in the study that looked into the effects of using a communication tool and its effect upon teaching efficacy and student teacher and cooperating teacher relationships. Your time and involvement has been a great help in determining the nature of these relationships. I have three follow-up questions that I would appreciate your valued input in. Please mark the answer to each question by circling your choice. Thank you!

4) How much time do you believe you spent with your cooperating teacher *each week* **communicating about expectations and teaching performance in the classroom**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

5) How much time do you believe you spent with your cooperating teacher *each week* **communicating about FFA responsibilities as an agricultural science teacher**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

6) How much time do you believe you spent with your cooperating teacher *each week* **communicating about SAE responsibilities as an agricultural science teacher**? Please choose one from the following choices:

    A) Less than 30 minutes each week
    B) 30 minutes to 1 hour each week
    C) 1 to 2 hours each week
    D) 2 hours or more each week

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979)458-4067, araines@vprmail.tamu.edu.

If you have any questions or comments regarding the evaluation form I would be happy to talk with you. Please do not hesitate to contact me at (979) 862-7650 or by email at dedgar@aged.tamu.edu. Thank you very much for helping with this important research.

Sincerely,

Don W. Edgar
Graduate Teaching Assistant
Texas A&M University
Agricultural Leadership, Education & Communications
979-862-7650
dedgar@aged.tamu.edu

APPENDIX J

Data Analysis With Out Outlier Removed

Gender

Table A

Gender of Student Teachers (*N*=82)

	Gender	*f*	*P*	*M*	*SD*
All Groups	Male	32	39.0		
	Female	50	61.0		
	Total	82	100.0	1.61	.49
Control Group	Male	24	38.7		
	Female	38	61.3		
	Total	62	100.0	1.61	.49
Treatment Group	Male	8	40.0		
	Female	12	60.0		
	Total	20	100.0	1.60	.50

Age

Age was another variable under study described relating to the groups in this study. The mean age of all groups (N=82) in this study were 23 (*M*=23.10) with a range of 21 to 47. The mean of the control group (n=62) were 23 (*M*=23.22) with a range of 21 to 47. The mean of the treatment group (n=20) were 22 (*M*=22.70) with a range of 21 to 26. The data from all groups (N=82) were significantly positively skewed with a statistic of 5.23 and kurtosis was leptokurtic and significantly non normal with a statistic of 32.64.

Placement

Table B

Placement of Student Teachers at Cooperating Center (N=82)

	Placement	*f*	*P*	*M*	*SD*
All Groups	Single				
	Multi-teacher				
	Total	82.0	100.0		
Control Group	Single				
	Multi-teacher				
	Total	62.0	100.0		
Treatment Group	Single				
	Multi-teacher				
	Total	20	100.0		

Semesters Enrolled

Table C

Number of Semesters Enrolled in Secondary Agricultural Science by All Student Teachers. (N = 82).

Semesters Enrolled	*f*	*P*	*M*	*SD*
None	17	20.7		
1-2	6	7.3		
3-4	12	14.6		
5-6	10	12.2		
7-8	37	45.1		
Total	82	100.0	3.53	1.60

Table D

Number of Semesters Enrolled in Secondary Agricultural Science by Student Teachers in Control Group (n=62)

Semesters Enrolled	*f*	*P*	*M*	*SD*
None	13	21.0		
1-2	5	8.1		
3-4	12	19.4		
5-6	7	11.3		
7-8	25	40.3		
Total	62	100.0	3.42	1.58

Table E

Number of Semesters Enrolled in Secondary Agricultural Science Taken by Student Teachers in Treatment Group (n=20)

Semesters Enrolled	*f*	*P*	*M*	*SD*
None	4	20.0		
1-2	1	5.0		
3-4	0	0		
5-6	3	15.0		
7-8	12	60.0		
Total	20	100.0	3.90	1.65

Academic Standing

Table F

Academic Standing of All Student Teacher (N=82)

Academic Standing	*f*	*P*	*M*	*SD*
Undergraduate	61	74.4		
Postgraduate seeking only certification	7	8.5		
Postgraduate seeking certification and second undergraduate degree	6	7.3		
Graduate seeking certificate and graduate degree	8	9.8		
Total	82	100.0	1.62	1.25

Table G

Academic Standing of Student Teachers in Control Group (n=62)

Academic Standing	*f*	*P*	*M*	*SD*
Undergraduate	44	71.0		
Postgraduate seeking only certification	7	11.3		
Postgraduate seeking certification and second undergraduate degree	6	9.7		
Graduate Seeking Certificate and Graduate Degree	5	8.1		
Total	62	100.0	1.63	1.19

Table H

Academic Standing of Student Teachers in Treatment Group (n=20)

Academic Standing	*f*	*P*	*M*	*SD*
Undergraduate	17	85.0		
Graduate Seeking Certificate and Graduate Degree	3	15.0		
Total	20	100.0	1.60	1.47

Ethnicity

Table I

Ethnic Group of All Student Teacher (N=82)

Ethnicity	*f*	*P*	*M*	*SD*
Hispanic/Latino	2	2.4		
Native Hawaiian or other Pacific Islander	1	1.2		
White	79	96.3		
Total	82	100.0	5.93	.38

Table J

Ethnicity of Student Teachers in Control Group (n=62)

Ethnicity	*f*	*P*	*M*	*SD*
Hispanic/Latino	2	3.2		
Native Hawaiian or other Pacific Islander	1	1.6		
White	59	95.2		
Total	62	100.0	5.92	.38

Table K

Ethnicity of Student Teacher in Treatment Group (n=20)

Ethnicity	*f*	*P*	*M*	*SD*
White	20	100.0		
Total	20	100.0	6.00	.00

Agricultural Work Experience

Table L

Agriculture Experience of All Student Teachers (N=82)

Agriculture Experience	*f*	*P*	*M*	*SD*
None	4	4.9		
Mostly avocational	31	37.8		
Part-time employment	17	20.7		
Full-time employment (no more than 6 months)	15	18.3		
Full-time employment (more than 6 months)	15	18.3		
Total	82	100.0	3.07	1.23

Table M

Agriculture Experience of Student Teachers in Control Group (n=62)

Agriculture Experience	*f*	*P*	*M*	*SD*
None	4	6.5		
Mostly avocational	21	33.9		
Part-time employment	14	22.6		
Full-time employment (no more than 6 months)	14	22.6		
Full-time employment (more than 6 months)	9	14.5		
Total	62	100.0	3.04	1.19

Table N

Agriculture Experience of Student Teachers in Treatment Group (n=20)

Agriculture Experience	*f*	*P*	*M*	*SD*
None	10	60.0		
Mostly avocational				
Part-time employment	3	15.0		
Full-time employment (no more than 6 months)	1	5.0		
Full-time employment (more than 6 months)	6	30.0		
Total	20	100.0	3.15	1.35

Teaching Efficacy Descriptive Data

Engagement Construct

Table M

Teaching Efficacy of the Engagement Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.09	.92	-.01	.31	-.39	.61
2nd measurement	6.60	.92	-.25	.31	-.27	.62
3rd measurement	7.29	.93	-1.04	.31	1.49	.61
Treatment Group						
1st measurement	6.90	1.09	-1.54	.51	3.08	.99
2ndmeasurement	6.30	1.13	-.21	.51	3.08	.99
3rd measurement	6.51	1.17	-1.83	.51	5.97	.99
Overall						
1st measurement	7.04	.96	-.54	.27	1.01	.53
2nd measurement	6.52	.98	-.30	.27	-.13	.54
3rd measurement	7.09	1.04	-1.34	.27	3.56	.54

Instruction Construct

Table N

Teaching Efficacy of the Instruction Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.21	.89	.02	.31	-.39	.61
2nd measurement	6.98	.96	-.45	.31	-.35	.62
3rd measurement	7.46	.91	-.54	.31	.05	.61
Treatment Group						
1st measurement	6.78	.89	-.88	.51	.43	.99
2nd measurement	6.84	.78	-.25	.51	-.87	.99
3rd measurement	6.74	1.15	-1.63	.51	3.42	.99
Overall						
1st measurement	7.11	.90	-.17	.27	.03	.53
2nd measurement	6.95	.91	-.38	.27	-.40	.54
3rd measurement	7.27	1.02	-1.02	.27	2.21	.54

Management Construct

Table O

Teaching Efficacy of the Management Construct

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.30	.87	-.31	.31	-.03	.61
2nd measurement	6.94	1.10	-35	31	.19	.62
3rd measurement	7.42	.90	-.83	.31	1.10	.61
Treatment Group						
1st measurement	6.93	1.51	-2.37	.51	7.99	.99
2nd measurement	6.59	1.70	-1.75	.51	4.81	.99
3rd measurement	6.64	1.33	-2.00	.51	6.50	.99
Overall						
1st measurement	7.21	1.07	-1.85	.27	8.29	.53
2nd measurement	6.85	1.28	-1.26	.27	4.17	.54
3rd measurement	7.22	1.07	-1.59	.27	5.52	.54

All Measured Constructs

Table P

Teaching Efficacy of All Measured Constructs

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	7.20	.86	-.10	.31	-.26	.61
2nd measurement	6.84	.92	-.30	.31	-.29	.62
3rd measurement	7.38	.87	-.89	.31	.89	.61
Treatment Group						
1st measurement	6.87	1.10	-1.86	.51	4.40	.99
2nd measurement	6.58	1.08	-1.16	.51	2.17	.99
3rd measurement	6.63	1.17	-2.12	.51	6.63	.99
Overall						
1st measurement	7.12	.93	-.85	.27	2.30	.53
2nd measurement	6.78	.96	-.62	.27	.75	.54
3rd measurement	7.20	1.00	-1.46	.27	4.40	.54

Perceptions of Teaching Importance

Table Q

Perceptions of Student Teachers of Teaching Importance

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.50	.60	-1.79	.31	3.84	.61
2nd measurement	4.59	.38	-.42	.31	-1.28	.62
3rd measurement	4.66	.47	-1.37	.31	1.32	.61
Treatment Group						
1st measurement	4.47	.45	-.45	.51	-.44	.99
2nd measurement	4.47	.58	-1.10	.51	-1.16	.99
3rd measurement	4.64	.37	-.58	.51	-1.03	.99
Overall						
1st measurement	4.49	.57	-1.63	.27	3.58	.54
2nd measurement	4.56	.44	-.93	.27	.99	.54
3rd measurement	4.65	.44	-1.26	.27	.87	.54

Perceptions of Teaching Level Exhibited

Table R

Perceptions of Student Teachers on Teaching Level Exhibited by Cooperating Teacher

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.24	.67	-.76	.31	-.25	.61
2nd measurement	3.92	.89	-.94	.31	.21	.62
3rd measurement	4.08	.92	-1.1	.31	.64	.61
Treatment Group						
1st measurement	3.88	.61	.04	.51	-1.35	.99
2nd measurement	3.95	.71	-.45	.51	-.76	.99
3rd measurement	4.20	.65	-.72	.51	-.66	.99
Overall						
1st measurement	4.15	.67	-.52	.27	-.74	.53
2nd measurement	3.93	.85	-.88	.27	.19	.54
3rd measurement	4.11	.86	-1.15	.27	.87	.54

Perceptions of Importance of Professionalism

Table S

Perceptions of Student Teachers on the Importance of Professionalism

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.61	.49	-1.43	.31	1.71	.61
2nd measurement	4.67	.39	-.94	.31	-.36	.62
3rd measurement	4.75	.38	-1.21	.31	.10	.61
Treatment Group						
1st measurement	4.53	.53	-1.32	.51	2.12	.99
2nd measurement	4.67	.37	-.66	.51	-1.12	.99
3rd measurement	4.64	.33	-.31	.51	-1.21	.99
Overall						
1st measurement	4.59	.50	-1.37	.27	1.61	.54
2nd measurement	4.67	.38	-.86	.27	-.55	.54
3rd measurement	4.72	.35	-.95	.27	-.43	.54

Perceptions of Professionalism Exhibited

Table T

Perceptions of Student Teacher on the Level of Professionalism Exhibited by Cooperating Teacher

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.39	.65	-.97	.31	-.16	.61
2nd measurement	4.14	.93	-1.31	.31	.89	.62
3rd measurement	4.22	.98	-1.37	.31	.79	.61
Treatment Group						
1st measurement	3.97	.80	-1.33	.51	2.86	.99
2nd measurement	4.43	.58	-1.05	.51	.41	.99
3rd measurement	4.34	.66	-1.38	.51	1.71	.99
Overall						
1st measurement	4.28	.71	-1.13	.27	1.30	.53
2nd measurement	4.21	.86	-1.43	.27	1.48	.54
3rd measurement	4.25	.91	-1.44	.27	1.21	.54

Perceptions of Importance of Personality

Table U

Perceptions of Student Teachers on the Importance of Personality

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.64	.41	-.94	.31	-.16	.61
2nd measurement	4.67	.39	-.60	.31	-1.32	.62
3rd measurement	4.74	.32	-.88	.31	-.44	.61
Treatment Group						
1st measurement	4.56	.52	-1.27	.51	1.61	.99
2nd measurement	4.61	.40	-.46	.51	-1.44	.99
3rd measurement	4.68	.31	-.70	.51	-.37	.99
Overall						
1st measurement	4.62	.44	-1.09	.27	.70	.54
2nd measurement	4.65	.39	-.55	.27	-1.35	.54
3rd measurement	4.72	.32	-.81	.27	-.51	.54

Perceptions of Personality Exhibited

Table V

Perceptions of Student Teachers on Personality Level Exhibited by Cooperating Teacher

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.31	.65	-.79	.31	-.54	.61
2nd measurement	4.02	1.01	-1.42	.31	1.27	.62
3rd measurement	4.14	.98	-1.62	.31	2.11	.61
Treatment Group						
1st measurement	4.04	77	-1.38	.51	2.46	.99
2nd measurement	4.13	.72	-1.29	.51	2.09	.99
3rd measurement	4.15	.82	-1.77	.51	3.85	.99
Overall						
1st measurement	4.24	.69	-1.01	.27	.76	.54
2nd measurement	4.05	.94	-1.45	.27	1.62	.54
3rd measurement	4.14	.94	-1.63	.27	2.29	.54

Perceptions of Importance of Relationship

Table W

Perceptions of Student Teacher on the Importance of Relationship

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.59	.48	-1.75	.31	-3.50	.61
2nd measurement	4.53	.45	-.93	.31	.89	.62
3rd measurement	4.66	.39	-.82	.31	-.41	.61
Treatment Group						
1st measurement	4.33	.74	-2.32	.51	7.68	.99
2nd measurement	4.45	.49	-.17	.51	-1.68	.99
3rd measurement	4.43	.44	.18	.51	-1.40	.99
Overall						
1st measurement	4.53	.56	-2.25	.27	7.64	.54
2nd measurement	4.51	.46	-.70	.27	-.02	.54
3rd measurement	4.60	.41	.54	.27	-.98	.54

Perceptions of Relationship Exhibited

Table X

Perceptions of Student Teacher on Level of Relationship Exhibited by Cooperating Teacher

			Skewness		Kurtosis	
	M	*SD*	Statistic	Standard Error	Statistic	Standard Error
Control Group						
1st measurement	4.23	.63	-.50	.31	-.62	.61
2nd measurement	3.82	1.04	-.98	.31	.02	.62
3rd measurement	3.89	1.04	-.99	.31	-.17	.61
Treatment Group						
1st measurement	3.76	.93	-1.27	.51	1.02	.99
2nd measurement	3.91	.81	-1.20	.51	1.59	.99
3rd measurement	3.80	.92	-1.04	.51	.85	.99
Overall						
1st measurement	4.11	.74	-1.11	.27	1.65	.54
2nd measurement	3.84	.98	-1.04	.27	.29	.54
3rd measurement	3.87	1.01	-.97	.27	-.075	.54

APPENDIX K

ASTEQ

Agriscience

Student Teaching Experience

Questionnaire

(ASTEQ)

Thank you for participating in this important research project. The student teaching experience is an important component of your preparation as an agricultural science teacher.

Understanding your perceptions about important aspects of the student teaching experience is critical to making critical adjustments for future student teachers.

Your responses are confidential. Only the research team will have access to your individual responses.

Please read and follow the directions for each section of the questionnaire.

ID# (Last 4 SSN) _____ Name _____

Section I. Perceptions of the Cooperating Teacher

Directions: This section is designed to help us gain a better understanding of your perceptions of the **importance** and **current level** of your cooperating teacher. Please indicate your opinion about the **importance** and **current level** for each of the statements below. Your answers are confidential

Teaching/Instruction

How important is it? Low				High	**Cooperating Teacher Characteristics**	What level does my cooperating teacher exhibit? Low				High
(1)	(2)	(3)	(4)	(5)	1. Exhibits enthusiasm for subject	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	2. Demonstrates good knowledge of the subject matter	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	3. Maintains a good balance between classroom, FFA & SAE	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	4. Possesses good classroom management skills	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	5. Enforces a well defined discipline policy	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	6. Teaches effectively in the classroom	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	7. Teaches effectively in laboratories	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	8. Advises the local FFA chapter effectively	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	9. Supervises SAE programs effectively	(1)	(2)	(3)	(4)	(5)

Continue ⇨

Section I. (cont.)

Professionalism

How important is it? Low				High	**Cooperating Teacher Characteristics**	What level does my cooperating teacher exhibit? Low				High
(1)	(2)	(3)	(4)	(5)	1. Loves his/her job	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	2. Exhibits a positive attitude	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	3. Exhibits professionalism	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	4. Serves as a good role model for me as a prospective teacher	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	5. Demonstrates good knowledge of school policies	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	6. Recognized by other teachers and administrators as a good faculty member at their school	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	7. Establishes good relationships with administrators	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	8. Establishes good community relations	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	9. Has good interpersonal skills	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	10. Communicates effectively	(1)	(2)	(3)	(4)	(5)

Continue ⇨

Section I. (cont.)

Personality

How important is it? Low				High	**Cooperating Teacher Characteristics**	What level does my cooperating teacher exhibit? Low				High
(1)	(2)	(3)	(4)	(5)	1. Patient	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	2. Fair	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	3. Dependable/reliable	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	4. Cooperative	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	5. Sense of humor	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	6. Caring	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	7. Respectful	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	8. Open-minded	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	9. Trustworthy	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	10. Organized	(1)	(2)	(3)	(4)	(5)

Continue ⇨

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Section I. (cont.)

Cooperating Teacher/Student Teacher Relationship

How important is it? Low				High	**Cooperating Teacher Characteristics**	What level does my cooperating teacher exhibit? Low				High
(1)	(2)	(3)	(4)	(5)	1. Encourages me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	2. Gives me freedom to try things	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	3. Turns classes over to me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	4. Supports decisions made by me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	5. Helps me plan lessons and activities	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	6. Routinely observes me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	7. Provides constructive feedback to me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	8. Provides a variety of experiences for me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	9. Assists me when needed	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	10. Treats me as a fellow professional	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	11. Anticipates my needs	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	12. Provides clear expectations to me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	13. Shares resources with me	(1)	(2)	(3)	(4)	(5)
(1)	(2)	(3)	(4)	(5)	14. Assists me in finding a job	(1)	(2)	(3)	(4)	(5)

Continue ⇨

Section II. Teaching Efficacy

Directions: This section is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.

	How much can you do?								
	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How well can you respond to difficult questions from your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Continue ⇨

7

Section II. (cont.)

	How much can you do?								
	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
9. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14. How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Continue ⇨

Section II. (cont.)

	How much can you do?								
	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
17. How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19. How well can you keep a few problem students form ruining an entire lesson?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
20. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21. How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24. How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Continue ⇨

Section III. Background/Demographics

1. If you were offered a suitable agricultural science teaching position in a community of your choice, would you take it?
   A. Definitely Yes
   B. Yes
   C. Probably Yes
   D. Unsure
   E. Probably No
   F. No
   G. Definitely No

2. What are your plans after graduation?
   A. Teach Agricultural Science
   B. Teach another subject
   C. Continue education (grad school)
   D. Other employment (including military)
   E. Unsure

3. In high school, how many semesters of agricultural science courses did you complete?
   A. None
   B. 1-2
   C. 3-4
   D. 5-6
   E. 7-8

4. Current Major _____

5. Are you currently a/an?
   A. undergraduate
   B. postgraduate seeking **only** certification
   C. postgraduate seeking certification **and** second undergraduate degree
   D. graduate student seeking certification, **but not** a graduate degree
   E. graduate student seeking certification **and** graduate degree

6. Race/Ethnicity
   A. American Indian or Alaskan Native
   B. Asian
   C. Black or African American
   D. Hispanic/Latino
   E. Native Hawaiian or Other Pacific Islander
   F. White

7. Besides your formal education, which would best describe your agricultural work experience?
   A. None
   B. Mostly avocational (e.g., assisting a friend "feeding cows" on an occasional weekend, planting and caring for a garden)
   C. Part-time employment (e.g., working at the local feed store after school and on weekends)
   D. Full-time temporary employment, one or more summers, in a production or agribusiness setting
   E. Full-time employment, for more than six months, in agricultural industry

8. University _____

9. Gender
   A. Male B. Female

10. Age (Years) _____

STOP

Round

Department of Agricultural Education
Texas A & M University
2116 TAMU
College Station, TX 77843-2116

APPENDIX L

Communication Form

Student Teacher Weekly Communication Form
Department of Agricultural Leadership, Education, & Communications

Student Teacher _____ Date _____
Cooperating Teacher _____ University Supervisor _____
School _____ Semester/Year Fall 2006

Directions: Rate the student teacher on the *Accomplished Practices* using the scale below. Please provide *comments* to help guide improvement and give *recommendations* for further reflection and practice.

Accomplished Practices	Rating	Comments
Assessment	Rating _____	Comments _____
	Recommendations _____	
Communication	Rating _____	Comments _____
	Recommendations _____	
Continuous Improvement	Rating _____	Comments _____
	Recommendations _____	
Critical Thinking	Rating _____	Comments _____
	Recommendations _____	
Diversity	Rating _____	Comments _____
	Recommendations _____	
Ethics	Rating _____	Comments _____
	Recommendations _____	

O - Outstanding; A - Accomplished; P - Progressing;
NI - Needs Improvement; NA - Not Applicable or observed

Go to Next Page

Directions: Rate the student teacher on the *Accomplished Practices* using the scale below. Please provide *comments* to help guide improvement and give *recommendations* for further reflection and practice.

Accomplished Practices	Rating	Comments
Human Development & Learning	Rating	Comments
	Recommendations	
Subject Matter Knowledge	Rating	Comments
	Recommendations	
Learning Environments	Rating	Comments
	Recommendations	
Planning	Rating	Comments
	Recommendations	
Role of the Teacher	Rating	Comments
	Recommendations	
Technology	Rating	Comments
	Recommendations	

O - Outstanding; A - Accomplished; P - Progressing;
NI - Needs Improvement; NA - Not Applicable or observed

Print Form Go to Next Page Submit by Email

Student Teacher Weekly Communication Form – Guidelines
Department of Agricultural Leadership, Education, & Communications

Accomplished practices are competencies the student teacher should demonstrate during the student teaching experience. The cooperating teacher should communicate strengths and areas for improvement to the student teacher so that they can reflect on those practices and work on ways to improve. This feedback from the cooperating teacher will allow the student teacher to become proficient.

Rating Scale:

O – **O**utstanding: The student teacher demonstrates the skills consistently in an exemplary manner.

A – **A**ccomplished: The student teacher demonstrates the skills consistently in an acceptable manner.

P – **P**rogressing: The intern is showing adequate progression toward the demonstration of this practice. There has been shown continual improvement.

NI - **N**eeds **I**mprovement: The student teacher demonstrates the skills ineffectively or a serious absence of these skills is observed. The student teacher needs guidance and improvement in this area.

NA - **N**ot **A**pplicable or observed for this observation/evaluation. There is not enough data to make a judgment or no opportunity to observe these skills.

Indicators for each Accomplished Practice:

Assessment:
- ✓ Collects information about the students from various sources
- ✓ Is familiar with alternative types of measurements
- ✓ Communicates student progress to students, parents, and staff
- ✓ Uses results of assessments to individualize learning
- ✓ Modifies instruction based on learning assessments
- ✓ Keeps records to monitor student progress

Communication:
- ✓ Communicates high expectations to learning to students
- ✓ Practices strategies that support individual and group activities
- ✓ Provides constructive feedback to students
- ✓ Varies communication depending on student needs
- ✓ Communication with colleagues, families, and administrators
- ✓ Establishes positive interactions between teacher and students that are focused on learning

Continuous Improvement:
- ✓ Works to continue the development of his/her own background in instructional methodologies, learning theories, second language acquisition theories, trends and subject matter
- ✓ Participates in training and other professional development experiences
- ✓ Works as a reflective practitioner and develops the skills to recognize problems, research solutions and evaluate outcomes.

Critical Thinking:
- ✓ Teaches critical thinking skills to students
- ✓ Provides opportunities for students to expand their problem solving and critical thinking skills
- ✓ Uses discussion, group interactions and writing to encourage student problem solving
- ✓ Poses problem, dilemmas and questions in lessons

Go to Next Page

Learning Environments:
- ✓ Accepts and values students from diverse cultures and linguistic backgrounds
- ✓ Treats diverse students equitable
- ✓ Creates a climate of mutual respect in the classroom
- ✓ Uses materials and resources that are multicultural
- ✓ Provides a range of activities for students with different cultures and experiences

Ethics:
- ✓ Encourages students to think independently
- ✓ Provides students access to different points of view
- ✓ Attempts not to distort nor misrepresent facts
- ✓ Protects students from conditions harmful to learning or to their mental and physical health
- ✓ Maintains honesty, confidentiality and integrity in all use of information and professional decisions.
- ✓ Provides quality education to students regardless of race, color, religion, age, national or ethnic origin, political beliefs, marital status, handicapping condition(s) or family or linguistic background.
- ✓ Recognizes ethical standards and strives for personal improvement

Human Development and Learning:
- ✓ Recognizes developmental levels among groups of students
- ✓ Uses multiple activities and alternative instructional strategies to engage and motivate students
- ✓ Varies activities to accommodate different student learning needs, developmental levels, and experiential backgrounds
- ✓ Recognizes and captures learning theories, subject matter structure, curriculum development, student development, and first/second language acquisition processes in lesson development

Subject Matter Knowledge:
- ✓ Uses robust understanding of subject matter to enable students to learn
- ✓ Provides examples when explaining subject matter content
- ✓ Uses inquiry and critical analysis within instruction
- ✓ Presents content in clear, challenging and compelling ways
- ✓ Uses materials and technologies of subject matter to integrate learning activities
- ✓ Acquires currency in subject field

Diversity:
- ✓ Establishes smooth and efficient routines
- ✓ Uses effective classroom management strategies
- ✓ Establishes standards for behavior and responds clearly, firmly and consistently to inappropriate behavior
- ✓ Uses learning time efficiently
- ✓ Provides clear directions and timely feedback for class work and homework

Planning:
- ✓ Analyzes and selects content and learning outcomes related to state, national and local standards
- ✓ Identifies student performance outcomes in planning
- ✓ Cooperatively works with colleagues in planning instruction
- ✓ Promotes study skills and test-taking strategies
- ✓ Accesses information from multiple resources
- ✓ Uses a variety of support and enrichment materials and activities

Role of the Teacher:
- ✓ Serves as a leader and an advocate for students
- ✓ Gives feedback on student progress to students & families
- ✓ Recognizes signs of emotional stress, child abuse, alcohol or drug abuse
- ✓ Knows procedures for reporting cases of stress or abuse
- ✓ Uses community/family context in developing learning activities and instructional strategies

Technology:
- ✓ Uses appropriate technology on a personal basis
- ✓ Uses electronic networks to gather information
- ✓ Teaches all students to use available technology
- ✓ Uses technology to assist in classroom management
- ✓ Selects appropriate educational software
- ✓ Uses, adapts and/or designs technology enhanced instruction to meet student needs and learning goals

Thank You!

APENDIX M

IRB

TEXAS A&M UNIVERSITY
VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU
College Station, TX 77843-1186
1500 Research Parkway, Suite B-150

979.458.1467
FAX 979.862.3176
http://researchcompliance.tamu.edu

Institutional Biosafety Committee | Institutional Animal Care and Use Committee | Institutional Review Board

DATE: 31-Jul-2006

MEMORANDUM

TO: EDGAR, DON W
TAMU-AGRICULTURAL EDUCATION(00006)

FROM: Office of Research Compliance
Institutional Review Board

SUBJECT: Initial Review

Protocol Number: 2006-0436

Title: Implementing Evaluation Reports and Its Effects Upon Preservice/Cooperating Teacher Relationships

Review Category: Exempt from IRB Review

The Institutional Review Board (IRB) has determined that the referenced protocol application meets the criteria for exemption and no further review is required. However, any amendment or modification to the protocol must be reported to the IRB and reviewed before being implemented to ensure the protocol still meets the criteria for exemption.

This determination was based on the following Code of Federal Regulations:
(http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm)

45 CFR 46.101(b)(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (a) research on regular and special education instructional strategies, or (b) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Provisions:

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX N

IRB Amendment

U

TEXAS A&M UNIVERSITY
VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU
College Station, TX 77843-1186
1500 Research Parkway, Suite B-150

979.458.1467
FAX 979.862.3176
http://researchcompliance.tamu.edu

Institutional Biosafety Committee | Institutional Animal Care and Use Committee | Institutional Review Board

DATE: 09-Nov-2006

MEMORANDUM

TO: EDGAR, DON W
TAMU-AGRICULTURAL EDUCATION(00006)

FROM: Office of Research Compliance
Institutional Review Board

SUBJECT: Amendment

Protocol Number:	2006-0436
Title:	Implementing Evaluation Reports and Its Effects Upon Preservice/Cooperating Teacher Relationships
Review Category:	Exempt from IRB Review

The Institutional Review Board (IRB) has determined that the referenced protocol application meets the criteria for exemption and no further review is required. However, any amendment or modification to the protocol must be reported to the IRB and reviewed before being implemented to ensure the protocol still meets the criteria for exemption.

This determination was based on the following Code of Federal Regulations:
(http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm)

45 CFR 46.101(b)(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Provisions: Requesting a revision for the use of existing data collected under protocol #2004-0396.

This electronic document provides notification of the review results by the Institutional Review Board.

VITA

Name:	Don Wayne Edgar
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Education:	B.S., Agricultural Services & Development, Tarleton State University, 1992
	M.S., Agricultural Education, Tarleton State University, 2003